PERSONALITIES

By George F. Taubeneck

The Dairy Show

Elsewhere in this issue and last Engineering Editor JOHN T. SCHAEFER has given readers a pretty thorough coverage of refrigeration exhibits and information presented at the annual conclave of dairy associations in Cleveland last week.

On page 8 of this issue is an editorial born out of the discussions in which refrigeration men locked arms and horns with dairymen at that conclave. This editorial attempts to congeal and condense the most important—from the standpoint of refrigeration—recent developments in the dairy industry, as reported at that conclave.

It would be difficult in this kolyum to add to these reports, even though we feel it a duty to contribute *something* in return for the swell time we had over there. Like most conventions which draw men from this industry, it had a convivial swing which was good for the soul. Among old friends we saw there were:

JOHN WYLLIE, Liquid Cooler; JACK MARSHALL and ARCH BLACK of Melchior, Armstrong & Dessau; H. J. KRACKOWIZER (Krack's Koils Kool), Refrigeration Appliances, Inc.; B. J. VAN DOREN, R. B. AMBROSE, PAUL BUNGER, JIM IRWIN, and C. S. WHEELER (Indianapolis distributor), Frigidaire; RAY MARTIN, E. R. LEGG, and A. H. REINACH, Kelvinator; W. M. TIMMERMAN and EDWINA NOLAN, General Electric; FRED HENNEMAN, refrigeration engineer from Amsterdam, Holland; Messrs. ROBBINS and BURKE, who make truck bodies; J. L. ROSENMILLER, sales promotion manager of York; TOM PENDERGAST, Universal Cooler; OLIVER SHAW, Anheuser-Busch; W. G. FARNSWORTH, O. S. McGUFFEY, and H. J. BERMAN, Kold-Hold; E. M. FRITZ, Grand Rapids Cabinet; JERRY REMICK of American Radiator's new ice cream cabinet division (Jerry is the son of JEROME H. REMICK, noted publisher of popular songs); W. STARCK, Cutler Hammer; Dr. BION R. EAST, W. J. MITCHELL, TRUMAN FOWLER, JAMES ERWIN, ED REBHOLZ, C. W. STILLMAN, and Dr. C. I. POST of National Oil Products Co., Inc. (the Vitamin D milk people).

Never have we seen Cleveland so crowded. The aforementioned Mr. Schaefer, along with HOWARD MATEER, advertising manager of the NEWS, were forced to occupy tiny cubicles, which were probably designed to hold mops and pails, in the Hotel Cleveland. Mateer had to open the door to put on his shoes.

In contrast to previous dairy conventions editors of the NEWS have attended in Detroit, Cleveland, and Atlantic City during the last few years, the 1934 gathering was plenty whoopy. Repeal and returning good times have apparently done a lot to cheer up the milkmen, and the general atmosphere was, well, sorta high.

* * *

Their Own Coffee Pot

A short time ago GEORGE LEHLEITNER, brilliant and well-liked sales promotion manager for Stauffer-Eishelman, Norge distributor in the New Orleans territory, brought three genyouwine Cajuns up to see Chicago and Detroit.

They were SID COUVILLE of Eunice, La., JOHN MANS of Jennings, La., and WILLIE EASTON of Ville Platte, La. All three were winners in a Norge sales contest, and George personally drove the trio to the Middle West to see the sights as a reward.

After spending two evenings and part of one day with this interesting group, we began to confuse Mr. Lehleitner with ROBERT L. RIPLEY, the "believe it or not" man. If we related all the tales George told about these men, this page would sound a little too much as if it had been written by Baron Munchausen, so we shall content ourselves with these shorts:

In his village of 300 families, Mr. Couville has sold 22 Norges this year. Record of all other makes: five Frigidaires, one G-E.

Mr. Easton has sold *all but two* of the electric refrigerators in operation in his territory.

All three of these contest winners not only are champ salesmen, but they do their own delivery, installation, and *servicing!* They have taken the official factory service courses, and are adjudged competent workmen by the distributor. And that, we claim, is the ultimate in service to the customer. The salesman thus can *personally guarantee* that the machine he sells will keep running.

All the way from New Orleans this quartet lugged their own coffee pot. We—us up Nawth, it seems, don't drink genyouwine cawfee. We're just sissies. And after sampling their witches' brew, we agree. New Orleans cawfee is a thick, black, murderous syrup which only the stout-hearted and the brave could possibly assimilate.

* * *

An Orchid to Us

Visitors to the office of ELECTRIC REFRIGERATION NEWS—who have occasion to look around appraisingly at the current crop of stenographers—frequently remark that somebody around here knows how to pick 'em. Whereupon Publisher F. M. COCKRELL rises and takes a bow. To tell the truth, we don't always agree that the boss knows a good-looking girl when he sees one. But what's our opinion against dozens of others?

Even though the complexion (note possibility of pun here—a "possibility" is about as far as we ever get toward a pun) of the stenographic force may change from time to time, it is indeed true that the girls all seem to have What It Takes, if one may judge from the attention they get.

The line-up of impatient swains who zealously and indefatigably toot the horns of Chevrolet, Ford, and Plymouth coupes in front of the Business News Publishing Co. each night around 5:15 is something worth going, well, a small distance, anyway, to see.

All this is inexcusably preliminary to saying that one fine morning not long ago the aforesaid stenos of this institution were all a-twitter. A uniformed chauffeur had driven a shiny black delivery truck, bearing the impanelled sign of one of Detroit's leading florists, to the front of the new home of the company.

Out stepped a smartly liveried footman with a long cardboard box which seemed capacious enough to accommodate a couple of dozen hollyhocks. He rank the doorbell.

As we said before, the girls were all a-twitter. What lucky girl was being surprised with flowers from an ardent swain? The clack of typewriters paused. The tabulator ceased its tabulating. Even breathing was stopped momentarily. And then the great let-down. The floral offering was for Mr. Taubeneck.

Now this kolyum doesn't hesitate to report that Mr. Taubeneck was no whit less surprised and nonpulssed than the empty-handed girls. Never before in his life had he received flowers. And in spite of the occasional uncomplimentary remarks of candid associates, he didn't believe he was dead yet—at least, not from the ears down.

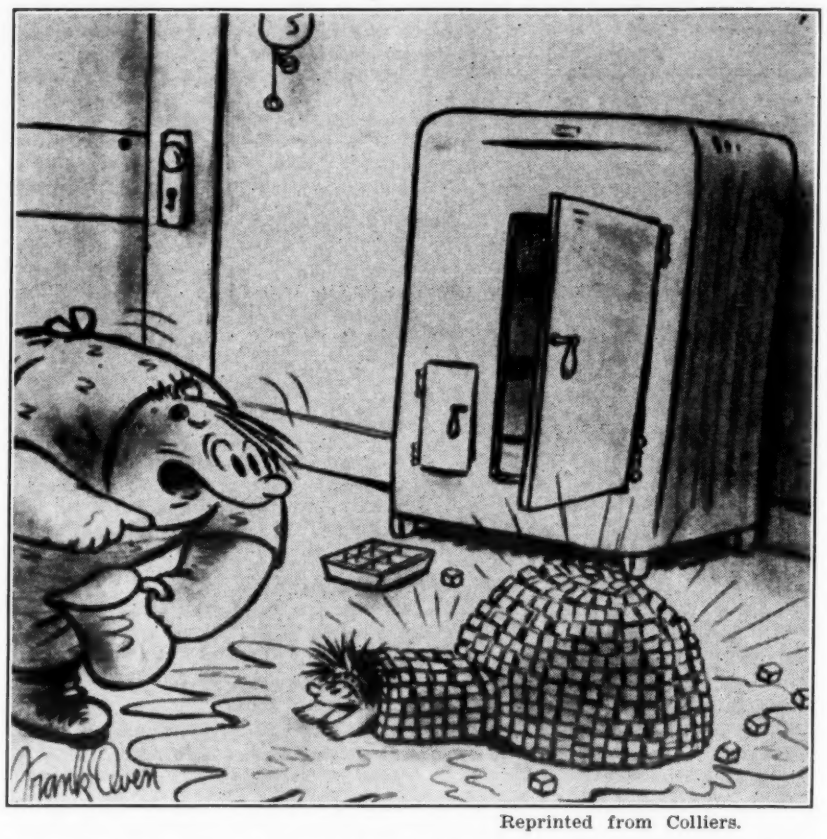
Opening the package, an honest-to-goodness orchid was disclosed! Assistant Advertising Manager HELEN GILMORE, who knows about such things, pronounced it an unusually fine specimen of this expensive flower. And, in sooth, anybody could see that it was a truly remarkable posey. Staff Writer ELSTON D. HERRON took our picture with it—box and all—immediately (see strip of photographs below).

Inside was a card bearing the name of A. A. UHALT, director of the dealer division of the refrigeration department of General Electric Co. On the card were also words to the effect that Mr. Uhalt and his department were following the Winchellian custom of sending an orchid in recognization of merit—in this case, in recognition of our candid camera pictures.

There was a postscript, however, which awarded us a scallion for the extremely informal photos of Mr. Uhalt addressing a group of dealers published in a recent issue.

That night the orchid graced the attractive figure of Mrs. ELSTON D. HERRON at a formal dress party.

Philbert Invades Refrigeration



Reprinted from Colliers.

"So you don't care if your igloo is going to melt soon—you want Mamma to stop swiping your ice cubes!"

Horrible Example

Not always, though, are the contributions so kind. A few weeks ago we received a letter which really had us on the spot. Purportedly signed by a Chicago preacher, it told a sad tale of one HERMAN FORTESQUE, who had been used for years by this preacher in his lecture tours as a living example of the ravages of drink.

He had heard, wrote the minister, that our acute and unremitting alcoholic condition would fit us for the position of successor to the unfortunate Mr. Fortesque. A small salary and expenses would be granted for the duration of the current season's lecture tour, and in addition we would have the intangible satisfaction of helping to further a most worthy cause.

This, we mused bitterly, was our reward for a studied sobriety which had once caused the president of one of the leading electric refrigeration manufacturers to utter in public: "The trouble with the editor of ELECTRIC REFRIGERATION NEWS is that he doesn't drink."

It all came out the other day, however. Our persecutor was none other than JIMMY DAVIN, sales promotion manager of General Household Utilities; and it seems that the appeal from the Chicago prohibitionist was sent out as a circular letter to a number of Jimmy's friends.

Some day we're gonna catch up with that Davin guy—just you watch.

* * *

Crosley Phenomena

Everything POWEL CROSLEY, Jr., maker of Crosley radios and refrigerators, touches turns into news. Witness this clipping from a recent issue of *Time*:

"In Mason, Ohio, G. L. Gerard heard mountain fiddlers playing a tune from inside a rain spout on his barn.

"All over town tin roofs spat fire at the touch of a screwdriver, lights flashed on at 2 a. m.

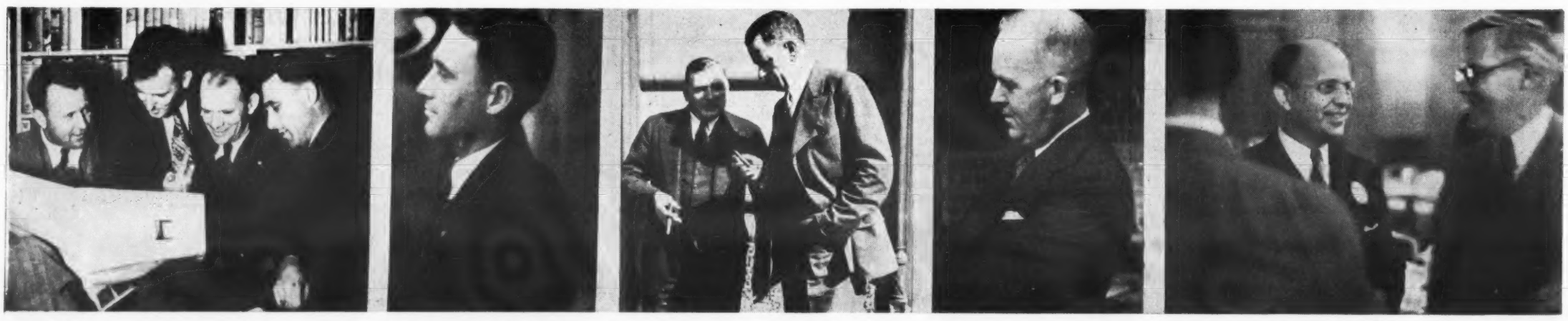
"John La Mar, who sells melons, pointed an accusing finger at a steel tower which tapers 831 feet above the village, insisted:

"'I've watched clouds come rolling up until they reach that tower. Then they split in two and each part goes a different direction and we don't get a drop.'

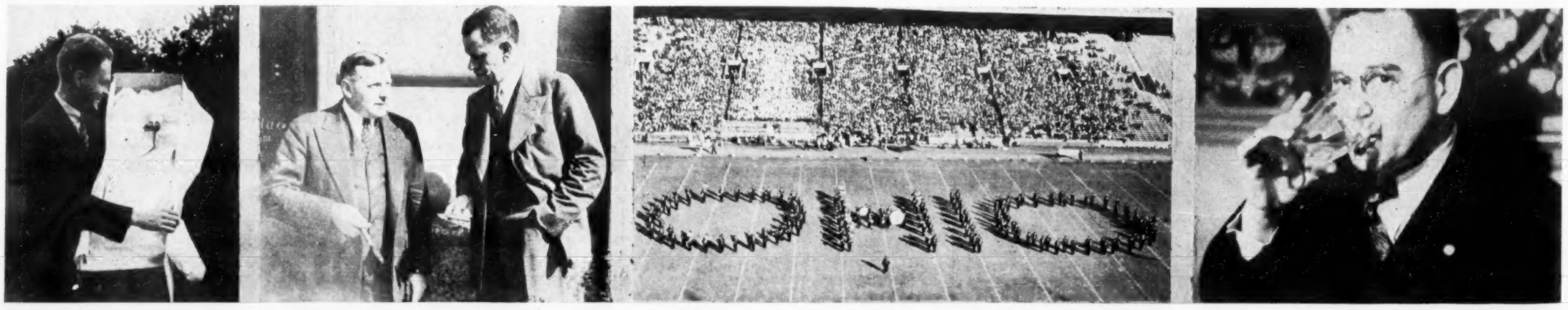
"Owner of Mason's tower is POWEL CROSLEY, Jr.'s 500,000-watt Radio Station WLW, strongest broadcaster on earth.

"WLW pointed out that the people of Mason, if they wanted to install the proper apparatus, could probably snatch enough power out of the air to cook their meals, wash and iron their clothes, clean their rugs, run their radios."

Candid Camera Catches Varied Assortment of Refrigeration Men in Odd Moments



(1) John Mans, George Lehleitner, Willie Easton, and Sid Couville, the four stout coffee drinkers from Louisiana, suh, mentioned above; (2) Mr. Couville at 4 a. m. (3) A mysterious conference—from which more may be heard later—between Lester Larkin, inventor of the Larkin cross-fin coil, and a gentleman introduced as "a financier who prefers to remain incognito." (4) Ralph Cameron, G-E department store manager, during a Nema subcommittee conference. (5) Clark Wilmot (center), contact man for the Brooke, Smith & French agency.



(1) No, this is not the editor's first-born. It is El Herron's photograph of the editor and his orchid (see story above for details). (2) Whoa! Mr. Larkin and the mysterious stranger enter the scene again. By this time we are about convinced that the "financier incognito" is Bill Cunningham of Dayton, formerly president of Trupar. (3) Close on the heels of the rip-roaring baseball season comes football which, under revised rules, is an excitingly different game this year. The above photograph, however, is not football-under-the-new rules. It is the University of Illinois band at the recent Illinois-Ohio game. (4) Dave Trilling of Trilling & Montague, Norge distributor in Philadelphia, is drinking—of all things—a glass of water.

THE NEWSPAPER OF THE INDUSTRY

ELECTRIC REFRIGERATION NEWS

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Big Unit Group Asks Assurance Of Government

Refrigerating Machinery Group Cites Need for Restored Confidence

CHICAGO — Stimulation of confidence in the minds of investors and business men by the balancing of the national budget and certainty as to the future stability of the dollar are needed if recovery is to come to the durable goods industries, declared W. S. Shipley, head of the York Ice Machinery Corp. and retiring president of the Refrigerating Machinery Association, in sounding the keynote at the twenty-first annual convention of the Refrigerating Machinery Association.

The convention was held Oct. 22 and 23 in Chicago.

"I feel from my close contact with the durable goods industry in which we are all engaged, that prosperity will return just as soon as confidence returns to the investors of capital," said Mr. Shipley.

"These investors must have some assurance from the Federal Government of a balanced budget, and a stable monetary policy if they are to be expected to release the flood of capital so sorely needed in the durable goods industries which is now dammed up by national uncertainty. I feel that our government in Wash-

(*Concluded on Page 2, Column 1*)

TVA Electric Show In Knoxville Nov. 12

KNOXVILLE, Tenn.—The coming to Knoxville of Tennessee Valley Authority power and the Electric Home & Farm Authority appliance program will be celebrated by an electrical exposition which will be held Nov. 12-17 in one of the large buildings on the Fair grounds here.

Local distributors and dealers will cooperate with the *Knoxville News-Sentinel*, the TVA, and the EH&FA in putting on the show.

Selling will be allowed on the floor of the show, it has been announced.

Both the TVA and EH&FA have announced that they will have large central exhibits. There will be an educational demonstration illustrating TVA construction activities, and various presentations showing the economy of the use of electricity in the home.

Ice Refrigerator Code Authority Approved

WASHINGTON, D. C.—The NRA last week announced recognition of the Code Authority for the Household Ice Refrigerator industry, membership of which is as follows:

W. F. Arndt, Duluth Refrigerator Co., Duluth, Minn.; M. O. McClellan, Rhinelander Refrigerator Corp., Rhinelander, Wis.; B. K. Miller, Sanitary Refrigerator Co., Fond du Lac., Wis.; G. C. Raoul, Tennessee Furniture Corp., Chattanooga, Tenn.; and E. R. Roll of the Eau Claire Cold Storage Corp., Eau Claire, Wis.

Airtemp on the Production Line

Walter P. Chrysler, Jr. (extreme right), president of Airtemp, Inc., looks on as E. S. Chapman, head of the Amplex Division of Chrysler Motors, which manufactures the units, explains the operations of a workman who is putting the finishing touches on a floor-type unit.

40-Hour Week Asked For Electrical Industry

WASHINGTON, D. C.—Representatives of the electrical manufacturing industry appeared recently before the National Industrial Recovery Board to seek an increase in the work-week from 36 to 40 hours under the industry's NRA code.

It is thought that there will also be a change in the basic hourly pay, if hours of work are increased, although the proposed new wage scales have not been made public.

Consent was granted by the Board for a review of the electrical industry's proposal.

Beckman Heads Public Relations for Crosley

CINCINNATI—Powel Crosley, Jr., president of the Crosley Radio Corp., has announced the appointment of James W. Beckman as director of public relations.

Mr. Beckman is well known in the refrigeration industry as a former publicity man for the old Copeland company and for the Refrigeration Division of National Electrical Manufacturers Association, when Louis Ruthenburg was chairman and later consultant to the division.

Collections of Refrigerator Taxes Gain in September

WASHINGTON, D. C.—Excise tax collections on mechanical refrigerators during September amounted to $477,030.56, compared to $394,596.33 in September, 1933, according to a report issued recently by the Bureau of Internal Revenue.

2 Tennessee Utilities Enter into Contract With EH&FA

CHATTANOOGA, Tenn. — Electric utilities operating in two Tennessee cities have entered into an appliance financing contract with Electric Home & Farm Authority, it was announced today by George D. Munger, EH&FA commercial manager. The utilities serve Lebanon and Franklin, Tennessee.

The contract at Lebanon was entered into with the City of Lebanon, which operates the electric utility and was negotiated by Sam C. Bone, commissioner of public works.

The Franklin contract is with the Franklin Power and Light Co., a privately owned utility, and is signed by Laurence B. Howard, president.

Negotiations for EH&FA were carried on by Henry D. Brite, assistant to Mr. Munger.

With the signing of the contracts, Mr. Munger explained, EH&FA financing will be available on appliance purchases in these two cities.

Philadelphia Apartment Has Air Conditioning

PHILADELPHIA — Two self-contained Frigidaire air-conditioning units in the Alden Park apartment of Mr. and Mrs. Lawrence E. Jones, manager of the Manor, Kenilworth, and Cambridge apartment hotels, exclusive Philadelphia properties, this summer completely eliminated discomfort from heat and humidity, Mr. Jones recently wrote J. J. Pocock, Inc., Frigidaire distributor.

Mrs. Jones is a semi-invalid and the units were installed in a sunroom and bedroom for her comfort.

Cabinets 'Built-In' If Special Cable Is Used--FHA

NEW YORK CITY—Arthur F. Callahan, managing director of the Refrigerator Association of New York, Inc., has obtained a special ruling from the Federal Housing Administration concerning the manner in which household electric refrigerators must be installed if they are to be financed with loans obtainable under provisions of National Housing Act.

Instead of the usual plug-in cord with which electric refrigerators are normally equipped, a BX cable with soldered connections must be used in effecting installations where it is necessary to comply with regulations just promulgated by the FHA.

According to E. H. Campbell, sales promotion manager of Rex Cole, Inc., New York G-E distributor, the refrigerator distributors here will shortly launch a newspaper advertising campaign to acquaint the public with the fact that electric refrigerators are eligible to FHA financing.

Installation in Studio Made Sound-Proof

ROCHESTER, N. Y.—A new organ studio of radio station WHEC here has just been furnished air conditioning by the Betlem Heating Co., Carrier dealer in this territory.

Complicating the problem of installing the air-conditioning equipment, according to Miss Henrietta Betlem, air-conditioning engineer, was the necessity for making it soundproof from the studio.

The air-conditioning equipment was installed on the floor above the studio, and conditioned air is supplied through acoustically treated ducts to the organ chamber. A guaranteed noise level of minus 45 decibels below the normal sound level of broadcasting is maintained, Miss Betlem states.

The new studio is a room about 20 by 65 ft., window-less and completely sound-proofed. Equipment installed to condition it includes a model 39 L-2 Carrier Weathermaker with cooling and heating coils, and a 3-hp. water-cooled, methyl chloride Carrier compressor.

The cooling equipment was selected to maintain a temperature of 80° F. dry bulb and 66° F. wet bulb, with the understanding that no more than 30 people would occupy the room at one time. At the recent formal opening of the new studio, comfortable conditions were maintained with about 75 people present.

Kelvinator Conditioning School Opens Nov. 19

DETROIT—Training in air-conditioning engineering as applied to Kelvinator products will be the object of a 10-day air-conditioning school scheduled to open Nov. 19 at Kelvinator Corp.'s Detroit plant.

With a view to facilitating discussion of individual problems, admittance to the sessions will be limited to engineers in the employ of Kelvinator distributors, it has been announced. Past experience in air conditioning or heating and ventilating work will be a pre-requisite.

Plant Operators To Convene in Springfield, Ill.

Air Conditioning & Dairy Refrigeration Are Main Topics at Conclave

SPRINGFIELD, Ill.—Air conditioning, brewery, and dairy refrigeration will be discussed here this week in the 25th annual convention of the National Association of Practical Refrigerating Engineers, which meets Thursday, Friday, and Saturday, Nov. 1, 2, and 3.

Special recreational events have also been planned for members of the association. These include a stag party Thursday night, a dinner dance Friday night, a frolic at the Reisch Brewery Saturday night, and golf and sight seeing trips on Sunday.

The convention opens at 9 o'clock Thursday morning with the first business session, to be conducted by George G. Wall, president of the association.

Thursday afternoon the first technical session will be held, with Martin Vander Veer, vice president, in charge. This will be addressed by J. H. H. Voss of New York City on "Plant Improvement Through Compressor Valves," next by Prof. H. A. Ruehe, head of the department of dairy husbandry at the University of Illinois on "Recent Developments in the Hardening of Ice Cream," and finally by J. L. Shrode, president of Alco Valve Co. (St. Louis), on "Operation and Application of Automatic Expansion Valves."

The second technical session, Friday morning, will be in charge of J. E. Petermann, vice president of the association. At this meeting, K. M. Holaday will talk on "Patent Medicines for Plant Costs," Wallace Hertlein of the American Car & Foundry Co. will speak on "Air Conditioning on Railroad Cars," and R. J. Thompson of Kinetic Chemicals, Inc., will discuss "Application of Freon to Present Equipment."

The Friday afternoon meeting will

(*Concluded on Page 2, Column 3*)

N.Y. Service Men to Elect Officers

NEW YORK CITY—Master Refrigeration Association, Inc., organization of installation and service men, will meet here at 8 p. m. Friday, Nov. 2, in the Broadway Central hotel to vote upon the final draft of the association's constitution and to nominate officers for the coming year.

At a meeting held Oct. 19, 106 persons representing 43 service, engineering, and installation firms attended, according to E. S. Lape, secretary-treasurer of the organization.

Valves & Fittings Code Authority Meets Nov. 1

DETROIT—A meeting of the Supplementary Code Authority for the Refrigeration Valves & Fittings manufacturing industry will be held Thursday, Nov. 1, in the Book-Cadillac hotel here.

York Exhibit at Dairy Industries Exposition in Cleveland Attracts Record Crowds

The York refrigeration exhibit at the recent Dairy Industries Exposition in Cleveland, where the above pictures were taken, drew a steady flow of interested visitors throughout the week. Like all the other pictures of the dairy show in this issue (see pages 4 and 16), they were snapped in ordinary artificial light with a miniature camera by the editor.

SPECIFICATIONS OF 148 AIR CONDITIONERS PUBLISHED IN THIS ISSUE

Big Machine Group Elects Benedict

(Concluded from Page 1, Column 1)

ington realizes this, and is at last taking steps to restore this necessary confidence."

D. Norris Benedict, vice president and general manager of the Frick Co., Inc., was elected to the presidency of the association, succeeding Mr. Shipley, and J. M. Fernald, general manager, Baker Ice Machine Co., was elected vice president.

The new executive committee elected at the meeting is composed of the following men:

Mr. Benedict, Mr. Fernald, Mr. Shipley, A. H. Baer, vice president, Carbondale Machine Corp., G. A. Heuser, secretary-treasurer, Henry Vogt Machine Co., J. I. Lyle, president, Carrier Corp., Emil Vilter, president, The Vilter Mfg. Co.

Wage Rates Increased

While there had been no appreciable increase in the volume of business in the refrigerating machinery industry over the past year and while, as a matter of fact, many of the companies engaged in this field had suffered substantial decreases in business, Mr. Vilter, in reporting for the manufacturers' committee, stated that wage rates had been substantially increased during the past year, in many cases in excess of the rates prevailing in 1929.

However, Mr. Vilter pointed out that the average earned income of employees still continued below the 1929 level because of the lack of business.

Optimistic About Exports

In discussing the possibilities for export trade, Mr. Shipley's report was distinctly optimistic. He said:

"The drought and resulting unfavorable crop conditions in the United States, while imposing severe penalties on American agricultural interests, has proved a boon to such countries as Argentina, Australia, etc., who can compete in the world wheat and meat markets to advantage. Internal conditions in Australia and Argentina, and some other countries, have been improving steadily, and a favorable world market for these countries' goods will undoubtedly provide them with the necessary foreign exchange to import manufacturing equipment such as American refrigerating and air-conditioning machinery.

Cites Various Countries

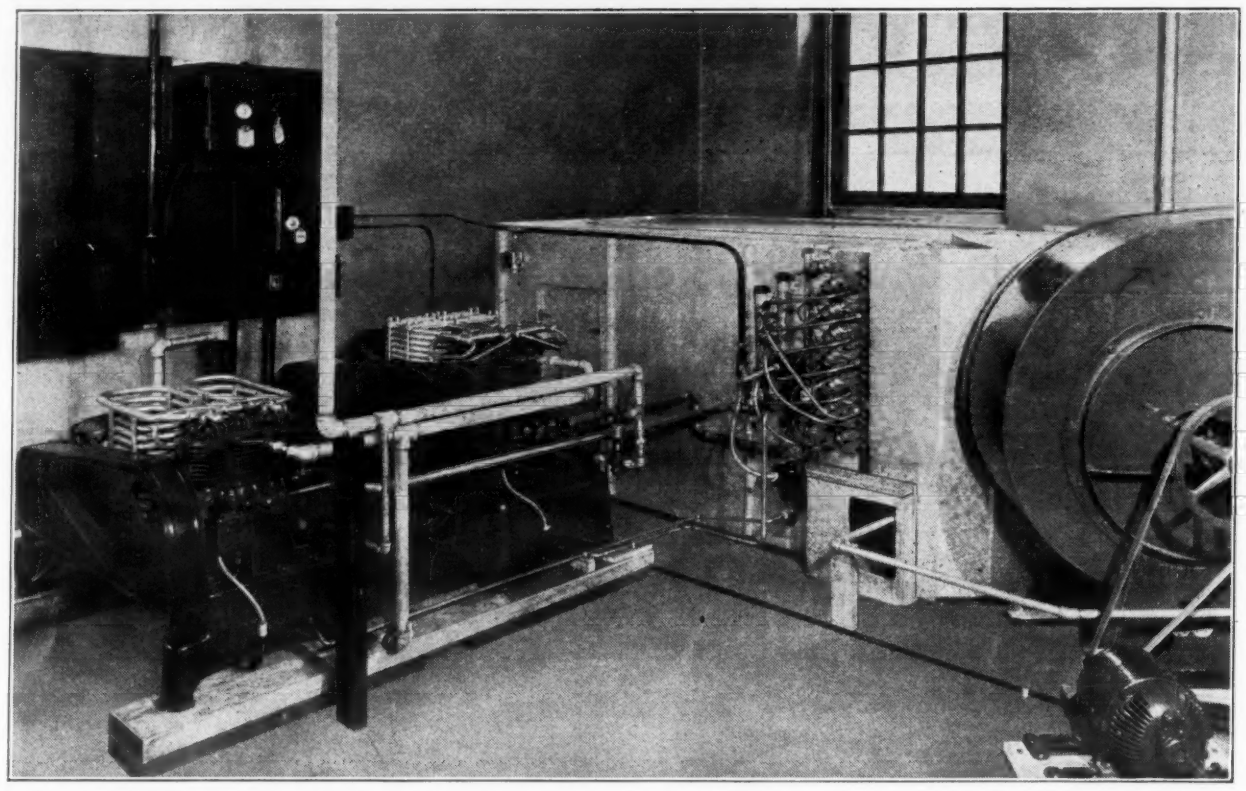
"South Africa, with a high price set on gold, Cuba with its new reciprocal trade agreement with the United States, Mexico with its final political stability, England with its balanced budget, Brazil with its coffee output stabilized, are all fruitful fields for sales of American durable goods.

"Government control of exchange formerly rigidly enforced in many countries is gradually being relaxed, thus enabling exporters of American machinery to obtain payment on favorable terms. In addition to improved conditions existing abroad, our own government is adopting a foreign policy that is particularly significant and favorable to American manufacturers of durable goods. The recent strides made by the government to effect reciprocal trade agreements with foreign countries, is heartening to our manufacturing industries."

Mr. Baer reported for the standing Committee on Standardization; Lee Nusbaum of the Pennsylvania Engineering Co. of Philadelphia, reported for the Business Ethics Committee; Stuart E. Lauer of York Ice Machinery Corp., reported for the Fair Trade Practice Committee; L. S. Morse of York Ice Machinery Corp. reported for the Committee on Safety Code for Mechanical Refrigeration; and William B. Henderson reported for the Membership Committee.

Mr. Shipley, as retiring president, was presented with a barometer by members of the association.

The Heart of a Comfort Cooling Installation



Component parts of an air-conditioning system as seen in the installation made in the Ogden Grill in Chicago by Midwest Engineering Co., Frick distributor. At the left is the refrigerating machine, at the right the blower, and in the center the conditioning chamber which includes heating and cooling coils and filters.

Nema Committee Will Counsel on TVA

NEW YORK CITY—Members of sections and groups of the National Electrical Manufacturers Association whose business relations with the Tennessee Valley Authority and Electric Home & Farm Authority are of such a character that industrial policy negotiation is preferable to individual approach are informed that the Nema committee on the EH&FA consisting of Messrs. A. D. Byler, chairman; G. D. Dunklin, and C. E. Rainsbury has been authorized by the Executive Committee to counsel on both TVA and EH&FA matters.

Leading Salesmen for Crosley Distributors Form Organization

CINCINNATI—The Crosley 100 Percenters, composed of crack Crosley distributor salesmen formed a permanent organization at a dinner at the Netherland Plaza here, Thursday evening, Oct. 25.

The new organization of radio and refrigerator salesmen elected M. H. Marshall of Anchor-Lite Distributing Co., Pittsburgh, president; F. R. Reynolds of E. J. Herman Sales Co., San Antonio, Tex., vice president; Joseph Hecht of Apollo Electric Co., Newark, secretary-treasurer. Don Park, sales department, Crosley Radio Corp., was elected executive vice president.

Powel Crosley, Jr., president of the Crosley Radio Corp., was elected honorary president. In addition to Mr. Crosley and Mr. Park, the following members of the Crosley company were elected to honorary membership: Howard Richardson, assistant to the president in charge of sales; Glenn Corbett, advertising and sales promotion manager; and James W. Beckman, director of public relations.

The organization will be permanent and officers will hold office for terms of one year and will be elected or replaced by distributor salesmen who qualify for membership in the Crosley 100 Percent Club.

The charter members of the new organization are: M. H. Marshall, Anchor-Lite Distributing Co., Pittsburgh; F. R. Reynolds, E. J. Herman Sales Co., San Antonio, Tex.; Joseph Hecht, Apollo Distributing Co., Newark; Henry Howe, Tarbell Waters Co., Inc., Springfield, Mass.; A. A. Levy, Interstate Electric Co., New Orleans; M. Lindeman, Glasco Electric Co., St. Louis; C. H. Mauck, Crosley Distributing Corp., Chicago; Sam Rabuchin, Lappin Electric Co., Milwaukee; C. W. Steltzriede, Saginaw Hardware Co., Saginaw, Mich.; A. C. Ogle, W. E. Titus Radio Corp., Oklahoma City; Guy Morehouse, H. A. McRae & Co., Inc., Troy, N. Y.; G. F. Jackson, Bond Rider Jackson Co., Charleston, W. V.; and J. E. Arnette, Consolidated Automotive Co., West Palm Beach, Fla.

Plant Operators Will Convene This Week

(Concluded from Page 1, Column 5)

be conducted by John A. Hawkins. Speakers include C. M. Gilbert of Chicago on "Review of How One Brewery Plant Was Rehabilitated" and George Reichl of Chicago on "Refrigeration in the Modern Brewery." Following these, members of the research department of Westinghouse Electric & Mfg. Co. will demonstrate an "electrical circus."

Saturday's technical session will be addressed by H. C. Guild in a "Report of Investigation on Heat Transfer in Pipe," followed by an open discussion on various data presented at the convention. Saturday afternoon's business will be reports of committees, a preference vote on the 1935 convention city, and election of officers.

Preceding each technical session a "Question Box" will be held, with all members invited to discuss certain technical questions of refrigeration. The first will be conducted by H. T. Holbrook, the second by H. G. Venemann, the third by K. M. Holaday, and the last by C. T. Baker.

Alcatraz Island Prison Equipped by Kelvinator

SAN FRANCISCO—The extreme precaution taken by the U. S. government to insure that the new federal prison on Alcatraz Island be kept escape-proof is exemplified in the handling of an order for 27 Kelvinator refrigerators recently sold to the government by H. R. Basford Co., local distributor.

As only federal police boats are allowed near the island, the Basford company was instructed to deliver the Kelvinators at one of the local piers, from which they were taken across by government men. The prison officials would not permit the distributor's service men to make the installations, but sent one of the guards over to the mainland to take service instruction.

Recently the government transferred 200 of the nation's most notorious criminals, including Al Capone and "Machine Gun" Kelley, to this grim pile of rock in San Francisco Bay.

Kelvinator Sales Gain In Dollar Volume

DETROIT — Sales by Kelvinator Corp. during the company's fiscal year, just closed, were 34 per cent greater in dollar volume than those for the previous year and 42 per cent in excess of 1932 sales, it was announced Oct. 26 by H. W. Burritt, vice president in charge of sales.

Detroit Engineers Inspect Brewery

DETROIT—A large brewery in full operation was inspected by members of the Detroit Section of the American Society of Refrigerating Engineers Monday night when they went through the Goebel Brewing Co. plant at Rivard and Maple Sts. here.

The affair was a joint inspection trip and social get-together, with the Goebel engineers conducting refrigerating engineers through the plant and explaining the various brewing operations, and the tap room being patronized before and after the inspection trip.

George Bright, president, and Robert Doremus, chief engineer of the Detroit Ice Machine Co. which installed the refrigerating equipment, were on hand to tell about the refrigerated processes.

Men who registered at the meeting included:

Charles Abel, Abel Refrigeration Service; Edward Barger, Kelvinator Corp.; R. Benson, Kelvinator Corp.; George Bright, Detroit Ice Machine Co.; H. G. Chamberlin, Stewart-Warner Co., Chicago; T. G. Crider, Kelvinator Corp.; J. O. Deering, Kelvinator Corp.; R. Doeg, Kelvinator Corp.; R. C. Doremus, Detroit Ice Machine Co.; J. H. Downs, Downs Refrigeration Service; W. Gifford, Kelvinator Corp.; D. P. Heath, McCord Radiator & Mfg. Co.; C. M. Heig, American House; Edward Hubacker, Norge Corp.; A. M. Janasik and Phil Johnson, Kelvinator Corp.; Hugh Keeler, University of Michigan, Ann Arbor; George Kingston, Kelvinator Corp.; C. D. McLaughlin, Kelvinator Corp.; E. T. Maton, Norge Corp.; C. R. Miller, Kelvinator Corp.; E. Naegly, Kelvinator Corp.; O. F. Nelson, American Injector Corp.; R. S. Nelson, Norge Corp.; T. H. Nutter, Kelvinator Corp.; J. M. Oberc, J. M. Oberc, Inc.; B. W. Palmer, Palmer Electric Co.; H. C. Preuss, Goebel Brewing Co.; Ira Reindel, Norge Corp.; John T. Schaefer, ELECTRIC REFRIGERATION NEWS; John Stoughton, Kelvinator Corp.; M. C. Terry, Kelvinator Corp.; B. E. Tiffany, Kelvinator Corp.; A. C. Wallich, Universal Cooler Corp.; John Wyllie, Jr., Temprite Products Corp.

NRA Denies Application To Build Ice Plant

NASHVILLE, Tenn.—The NRA has denied the application of James W. and J. O. Price of this city for permission to erect and operate a 20-ton ice manufacturing plant.

The application was denied on the grounds that "public necessity and convenience do not require the establishment of the ice manufacturing plant."

Leonard Sales for Year Show Increase

DETROIT — Leonard Refrigerator Co. shipments to customers during the company's fiscal year ending Sept. 30 were 40% ahead of shipments for the previous 12-month period and 60% greater than 1932 sales.

TEAMWORK

Success in business as on the playing field is won by the team with the best co-ordination, or teamwork.

Copeland makes every possible effort to co-operate to the limit with its fellow players (distributors) and backs up their plays with superb merchandise, reasonable prices and generous discounts, as well as protected territory.

Each Copeland distributor is sure of his place on the team if he in turn co-operates. He has everything to gain by "playing ball" all the time.

There are a few vacancies for distributors for either Commercial or Domestic franchises. Write today for complete details.

COPELAND REFRIGERATION CORP., Mount Clemens, Mich.
Division of Winslow-Baker-Meyering Corp.

Copeland
DEPENDABLE *ELECTRIC* REFRIGERATION

MELCO BRAND
Reg. U. S. Pat. Off.

NOTICE
TO USERS OF
REPLACEMENT
PARTS FOR
FRIGIDAIRE

There are thousands of Frigidaire machines out of guarantee.

MELCO is entering the replacement parts field and within 30 to 60 days will have a complete stock of:—

FLAPPER VALVE REEDS, SEATS & BUTTONS
FLAPPER VALVE PLATE ASSEMBLIES
PISTON VALVE DISCS & RETAINERS
GASKETS, BELTS & BRUSHES
PISTONS, RINGS & PINS
FILTERS, SCREENS & PADS
FLOAT VALVE NEEDLES
ECCENTRICS & SHAFTS
WATER VALVE STEMS
CONNECTING RODS
SHAFT SEALS

PARTIAL STOCKS AVAILABLE IMMEDIATELY

These quality and precision parts, produced by a manufacturer of long experience will be available in New York, Philadelphia and Boston.

AT COMPETITIVE PRICES

Write for Copy of Replacement Parts List No. 934

MELCHIOR, ARMSTRONG, DESSAU CO.
300 FOURTH AVENUE
NEW YORK, N.Y.

PHILADELPHIA BRANCH
1516 CALLOWHILL ST.

BOSTON BRANCH
614 MEMORIAL DRIVE
CAMBRIDGE

NRA & Courts Differ On Price Fixing

NEW YORK CITY—The opinions of NRA officials and justices of New York state courts apparently don't jibe on the matter of local enforcement of NRA-established minimum prices for the retail ice industry.

Declared NRA officials following an order setting new ice prices for the New York area:

"That the order will be virtually 100 per cent effective is assured, according to NRA officials, by the cooperation of New York City officials who, by authority of a recent city ordinance, are empowered to rescind the license of any manufacturer, wholesale distributor, or retailer in the industry who fails to comply with the code, or with any orders issued thereunder."

Said Bonynge, justice of a Kings County, N. Y., court, in the Matter of Tannebaum:

"The New York commission of Public Markets, Weights, and Measures does not have the power to deny an application for a license to vend ice upon the ground that the applicant has sold ice at less than the price specified by the Code for the Ice Industry. No duty rests upon the commissioners to enforce the Recovery Act or Code regulations. The act is fortified with adequate penalties to be enforced primarily through the Federal Courts."

Jenkins Wins Norge Display Contest

DETROIT—Jenkins Music Co. of Wichita, Kan., has been awarded first prize of $500 in a window display contest recently conducted by Norge Corp. among its dealers throughout the country. Second prize of $250 went to the Edwards Piano Co. of Jacksonville, Fla., and Levy Bros. department store of Burlingame, Calif., received the third award of $150.

Other prize winners, in order were: A. Victor & Co., Buffalo; Kansas City Power & Light Co., Kansas City; Barnes Woodin Co., Yakima, Wash.; Jones Store, Kansas City; American Avenue Hardware Co., Long Beach, Calif.; Enswiler Electric Co., Columbus, Ohio; L. L. Stearns & Sons, Williamsport, Pa.

The Jenkins window showed a Norge "Mystery model" in the center of a row of giant-size books, each titled with the name of a Norge feature. Large models of rollator cutouts served as bookends, and over this display was a streamer reading, "Don't judge a book by its cover alone!"

Second prize winner revealed a Norge against a full-size drawing of a streamlined automobile. Against an azure-sky background appeared the assertion that "if Norge were an automobile, it would run faster and go farther up steeper hills with more load on less fuel."

Third display showed a Norge in the center of a large ice (glass and cellophane) block, and was labelled, "Colder than a block of ice."

G-E Toppers Meet Jan. At Miami Beach

CLEVELAND — General Electric salesmen who by the end of this year pile up sufficient sales to give them membership in the company's Topper Club will have a free three-day outing in Miami, Fla., instead of Palm Beach, as was originally announced. The dates are Jan. 21 through 23.

Approximately 400 crack salemakers are expected to make the trip, and several floors of the Miami Biltmore hotel have been reserved for their use. One feature of the vacation will be the Toppers' privilege of riding between the Biltmore and Roney Plaza hotel at Miami Beach in aerocars or in autogyros which fly hourly.

Bell Rings for Each Sale In Frigidaire Contest

BOSTON—Frigidaire Corp. of New England, with headquarters here, recently sponsored a "Ring the Gong" contest among its dealers and their salesmen to promote sales of porcelain household models. Three Chevrolets were awarded as prizes.

Each time a salesman or dealer sold a porcelain refrigerator, he immedicately wired the Boston office, where a large gong was rung upon receipt of the wire. During the campaign period, 702 sales were made, according to Manager John S. Pfeil.

Republic Tabloid Shows Exhibits at Fair

YOUNGSTOWN, O.—Just brought off the press by Republic Steel Corp. is a 12-page rotogravure tabloid which illustrates exhibits at A Century of Progress in which Republic products are used.

"We've just got to get a new refrigerator. Our old one seems to be no good at all!"

REPLACEMENTS—For the first time in the history of electric refrigeration, replacements are mounting noticeably.

Electric refrigerators are failing in their service. And, though this means increasing business, it has its serious side. The bulk of these worn out refrigerators are only a few years old! Replacements are becoming necessary long before a normal life span has been reached.

It has been proved that a majority of replacements are due primarily to insulation failure. Cheap insulating materials become waterlogged in from one to four years of operation, and no refrigerator can give satisfactory or even useful service under such conditions.

The lesson to manufacturers, distributors and dealers is that consumers are buying other makes—the original make has demonstrated an unsavory failure.

Today, many more refrigerators than ever before are being insulated with Dry-Zero. This unique insulation is unaffected by moisture and is completely efficient as long as the box lasts. It is so much more efficient than cheap insulating materials that it saves from 30c, when a box is new, to as much as a dollar and a half a month in running costs.

Dry-Zero assures economical operation for the life of the refrigerator. Dry-Zero Corporation, Merchandise Mart, Chicago, Illinois. Canadian Office, 687 Broadview Avenue, Toronto, Ontario.

DRY·ZERO

REG. U.S. PAT. OFF.

THE MOST EFFICIENT COMMERCIAL INSULANT KNOWN

PERSONALITIES

By George F. Taubeneck

How to Become A Vice President

An item in a financial writer's column on the business page of a Detroit newspaper really stopped us the other night. It read:

"When the eminent financiers of the American Bankers Association, now holding forth in Washington, learned that Tom K. Smith is the banker of Dizzy and Daffy Dean, and especially looks after the investments of Daffy, the decks were cleared for action and it was determined to elevate Tom, out of turn, to the second vice presidency. A banker like that should be recognized. So that's fixed."

Now bankers are supposed to be the most staid, conservative, fishy-eyed, and unemotional of our citizens. That they share in the general hysteria over the pitching exploits of the Dean brothers of St. Louis should be a great comfort to those advertising men who believe in the power of associating their product with celebrities.

America is a nation of hero worshippers. When CLARK GABLE makes a personal appearance at a motion picture theater, valuable decorations are smashed in the general rush and crush to see him.

When the baby of our leading airman, CHARLES A. LINDBERGH, is kidnapped, it becomes the biggest news story (measured in actual column inches run) of all time.

When a midget sits on J. P. MORGAN's lap at a Senate investigating committee hearing, an oldtime interest in midgets is suddenly revived, with resulting profits to the promoters of Midget Village at the 1934 World's Fair.

When Lucky Strikes abandon celebrity testimonial advertising and Camels take it up, the latter passes the former in the race for leadership in cigarette sales.

When MAE WEST and GRETA GARBO appear in costume pictures, the entire conception of women's styles changes overnight—just as the males of four continents wear pinstripes an entire season because the Prince of Wales was seen in pinstripes at the races.

And when a St. Louis banker lets it be known that he is handling the investments for the two Oklahoma boys who pitched the Cardinals to a world's championship last summer, his delighted and admiring associates in the world of finance elect him—out of turn—a vice president of their national body.

In the refrigeration industry General Electric has been quick to seize every opportunity to identify its products with people in the limelight. From BETTE DAVIS to SALLY RAND, from HENRY FORD to TOM MIX, from ROSA PONSELLE to TOBY WING, and from CHARLES FRANCIS COE to COL. ROSCOE TURNER, General Electric has utilized in advertising and publicity all the celebrities its various executives could arrange to meet and know.

(Last week in Cleveland we called on WALTER DAILY, sales promotion manager of the specialty appliance department, only to learn that he was in Hollywood! Which means you should keep your eyes peeled for some new G-E tie-up with the movies.)

In New York City the G-E distributor, REX COLE, is an accepted member of that top circle of theatrical, sporting, night life, and literary notables who keep the gossip kolyumists in material. That Mr. Cole's association with people in the spotlight pays dividends can be seen by this quotation from today's O. O. McINTYRE column:

"Rex Cole told me today that in five years no American housewife would be washing dishes. All by electricity."

McIntyre's "New York Day by Day" column is syndicated to newspapers in practically every city of any size in the nation. Those two simple sentences by McIntyre may help the valiant CARL SNYDER, who is struggling so manfully to secure national acceptance for the G-E dishwasher, as much as the entire G-E appropriation for dishwasher advertising this year.

Westinghouse pursues the celebrity tie-up theory religiously, too; and Norge has recently "gone Hollywood."

Frigidaire and Kelvinator, sired out of the mechanical and gadget-minded automotive industry, haven't gone in much for hero-worship capitalization in their advertising, although their publicity men have made use of this national trait. Frigidaire, in particular, is heard from every time their refrigerators are installed in the homes of famous people.

On the other hand, GEOFF JOHNSTON, president of Universal Cooler and chairman of the Refrigeration Division of Nema, probably wouldn't walk across a small room to meet a celebrity. All that interests GEOFF is a good dividend.

* * *

Our Errors

It has taken us a long while and a good many words to get around to admitting and apologizing for an error which appeared in the Oct. 17 issue of the NEWS. But all the foregoing palaver about celebrities was occasioned by contemplation over the number of persons who have taken the time to call us and josh us about the caption underneath the picture of a girl tuning in a radio on page 13 of that issue.

This caption read: "Mrs. Roy Bolger, wife of the radio star, is shown setting the device on the new Atwater Kent radio which tunes itself on and off different stations according to a pre-selected schedule. It can be set for a 12-hour run."

Friends have hastened to tell us that Even a Child Should Know it is Mrs. RAY BOLGER, and not "Roy," as we had it. And that Bolger is not a radio star, but a dancing comedian, who must await the coming of television before "the vast unseen audience," which gargling announcers so love to prate about, can enjoy Bolger's particularly unique type of entertainment.

Most of our New York readers (at least, all those at the dairy show) seem to know that RAY BOLGER is co-starring with BERT LAHR in one of the biggest musical comedy hits the New York stage has had in years, "Life Begins at 8:40."

Moreover, we are informed that instead of being the wife of a radio star, Mrs. Bolger has been a radio star herself, and was well on the road toward the top as an airwaves singer when Ray decided that Life Couldn't Go On without her. Mrs. Bolger is the niece of TEX RICKARD, the most successful and famous sports promoter of all time.

While we're on the subject of errors, we'd like to apologize also for a few funny ones which appeared on this page in the last issue of the NEWS:

"We—us" for "we-'uns." In other words, Pardon Our Southern Accent.

"He rank the doorbell," instead of "he rang the doorbell." PHIL REDEKER says we must have been reading too many "POPEYE" comic strips, or we wouldn't have made an error like that.

"Nonpulssed" for "nonplussed." Come to think of it, "nonpulssed" might be a good word to add to the dictionary, and use occasionally as a relief from the bromide: "It took his breath away."

* * *

Grunow Balloon Ascension

Our only alibi for these errors is the Piccard stratosphere flight, which was sponsored by BILL GRUNOW and the People's Outfitting Co. of Detroit (which advertises it is the world's largest Grunow dealer).

Almost the entire editorial staff went out to Ford Airport last Monday night to watch Prof. JEAN PICCARD and his wife, JEANNETTE, the Chicago girl who holds the only balloon pilot's license ever granted to a woman in this country, take off for the upper crust of the world's atmosphere in a hydrogen-filled bag which was taller, when inflated, than a 12-story office building.

Some 25,000 other Detroiters—including HENRY FORD—were out there all night waiting for the ascension. By the time we arrived at the airport (3 a.m.) the task of inflation had begun. Powerful floodlights were thrown on the gigantic gas bag, and everybody patiently watched it gain size and height over a period of hours. Like the fabled Old Man from Greenwich, Flight Director EDWARD J. HILL fed the gas in "inich by inich."

It was 7 o'clock, cold and muggy, by the time BILL GRUNOW's balloon ascension took place. But most of the thousands of spectators who were still there at that time agreed that the whole affair was so interesting that it justified the all-night vigil.

The aforementioned Mr. Hill was the showman who kept the spectators awake and keenly curious through the long morning hours. Mounted on a platform he gave orders to the ground crew of 250 volunteer workers through a powerful public address system which carried his voice well out to the thousands of parked cars surrounding the airport.

Mr. Hill, who taught Mrs. Piccard how to fly, obviously knew practically all there was to know about getting a balloon up into the air. He started with an enormous empty bag, 700 cylinders of hydrogen, and the Dowmetal (magnesium alloy) stratosphere gondola in which the Piccards were to ride. He had only a novice ground crew to work with; yet he welded all these elements into a perfect ascension.

His orders were crisp and clear, and plain enough so that everybody listening in at the fringe of the field could picture mentally just what was happening. And in spite of the time it took, it was all quite exciting.

Mr. Ford stayed up all night to see the take-off from his flying field, and had with him more than 80 schoolchildren — pupils from the upper grades of his Greenfield Village school. PAUL and DONALD PICCARD, sons of the balloonists, saw the take-off, too.

WALTER DYER of General Household Utilities took part in the ceremonies preceding the flight, as did Vice President ANDREW WINEMAN of People's Outfitting Co.

After the immense, pear-shaped balloon had been inflated sufficiently to attach the gondola, it was moored to the ground by ropes attached to four posts. These connections were broken quickly by T.N.T. explosions, and the big bag started upward.

At first it looked as if the flight might end in disaster—just as did the stratosphere ascension of Commander SETTLE at A Century of Progress in the summer of 1933—when the black and white metal gondola bumped along the ground instead of rising neatly.

Just as the gondola appeared to crash into a post on the field, a dozen members of the ground crew ran forward, surrounded the light metal globe, and gave it a big heave. Simultaneously Mrs. Piccard dumped a load of ballast, and the balloon shot into the air and was off.

Nine hours later it came down in a tree top near Cadiz, Ohio. Mr. Piccard declared himself satisfied with the scientific observations he had made (purpose of the flight was to study the cosmic ray).

Prof. Piccard is a twin brother of AUGUSTE PICCARD of the University of Brussels, who made the first stratosphere flights in a sealed gondola in 1931 and 1932.

He was until last year, when brother Auguste came to this country, a chemist in the Du Pont plants at Wilmington, Dela.

After the flight, the following joint advertisement appeared in Detroit papers:

CONGRATULATIONS
Dr. Jean Piccard
Mrs. Jeannette Piccard, M. S.

We are proud to have been privileged to sponsor such a courageous contribution to science as you have so successfully completed. We are happy that you have come through your hazardous venture entirely without harm. We hope that your scientific findings will reward your valiant efforts. There can be no doubt that you join us in public acknowledgment of the magnificent cooperation of Mr. Henry Ford, without whose aid the flight might never have been possible. And we know that you also join us in paying whole-hearted tribute to Edward J. Hill for his masterful handling of that loyal, self-sacrificing Ground Crew that sent you into the air. It has been a grand experience, a happy association and a thrill we shall always remember. Gallant Lady and Man of Science, we salute you!

People's Outfitting Co.
Grunow Radios

* * *

A 'First' Man

Lieut. Commander FRED H. SCHNELL, recently appointed chief short wave engineer of General Household Utilities Co., has a lot of "firsts" dotting the biography of his career as a short-wave radio operator.

He copied the *first* message sent from Italy to the United States, addressed to President Wilson, during the war.

He sent the *first* message to Germany a day after the armistice acceptance message from that country was received. This was the *first* radio communication with Germany since the outbreak of the war.

Lieut. Schnell established the *first* two-way contact across the Atlantic—on about 100 meters—communicating with a Frenchman, in the year 1923.

At the request of the Navy department this short-wave radio expert conducted the *first* long range short wave tests for the Navy during the cruise of the United States Fleet to Australia and the South Seas, during which time short wave equipment was used on the *U. S. S. Seattle* to establish direct communication with Washington, D. C., and all parts of the world.

In six months the Navy department learned enough about the use of short waves to adopt these waves for Naval communications making it possible to reach any Navy ship in any part of the world, day or night. This was the *first* equipment of this type ever to be used in the Navy.

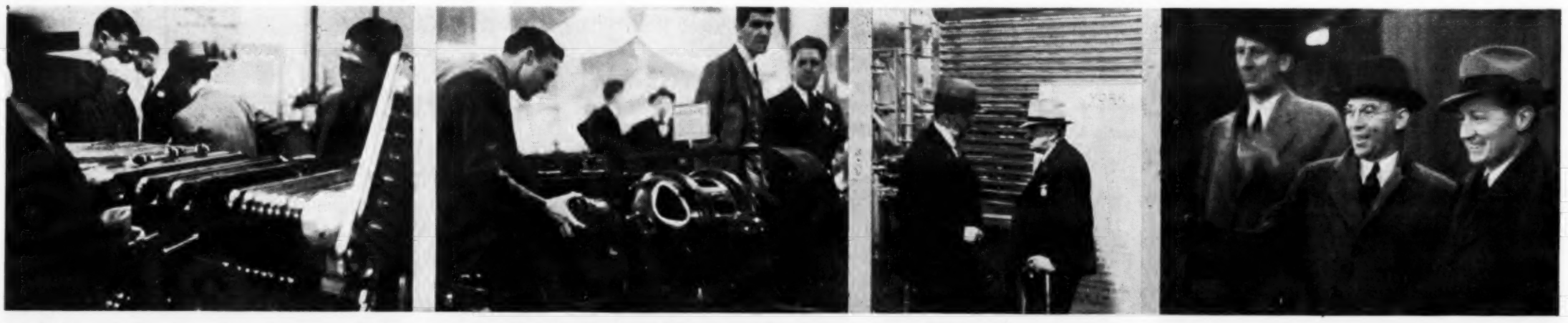
Lieut. Schnell was also credited with being the only radio amateur to receive signals from the Lindberghs' plane during the flight from the United States to the Orient, and at the time when their plane was thought to be lost or down in the wilderness.

Aside from these "firsts," Lieut. Schnell was traffic manager of the American Radio Relay League for six years, took part in the design and construction of the short wave radio equipment used in Byrd's expedition to the South Pole, won a prize for short wave reception of signals from the *Chicago Tribune's* plane, the *Untin Bowler,* during the flight to northern Canada, and helped design and construct the short wave equipment used on Bert Hassel's Greater Rockford plane which was forced down in north Greenland.

BILL GRUNOW is quite proud of his new staff acquisition.

Dairy Industries Exposition in Cleveland Attracts Refrigeration Men

National Oil Products fed plenty of thirsty visitors its Vitamin D milk. (1) Dr. Bion R. East (right) who introduced the process to the leading dairies of the country and who is largely responsible for the widespread acceptance of Vitamin D milk by medical authorities, explains his chart to Sam Dean, operator of a milk condensery which is a licensee of Dr. East's company. (2) At the bar. (3) Dr. East (extreme left) enjoys some of his own Vitamin D milk. (4) Vitamin D ice cream was also available.



(1) Dairy operator Sam Dean (extreme right) looks over a York exhibit. (2) The same Mr. Dean (extreme left) examines a Frigidaire compressor. (3) Two old-timers compare experiences. (4) Fred Hulburd (center) of Kelvinator and John Wyllie of Liquid Cooler snapped in front of the entrance to the Hotel Cleveland at midnight.

Contractors Cooperate with Each Other in FHA Program

WASHINGTON, D. C. — Federal Housing Administration, in a bulletin just issued, declares that there is a movement towards "cooperative contracting" among masonry, plumbing, electrical, and other independent contractors in order to enable the independents to take full advantage of the government's Better Housing program.

According to FHA officials, these independent contractors in cities where the Better Housing movement is beginning to operate are cooperatively banding together and forming general contracting companies on a partnership basis.

The FHA puts its stamp of approval on the "cooperative contracting" movement with the declaration that "there are a number of indisputable arguments in favor of the one flat, all-inclusive estimate on the cost and the subsequent delivery in 'capsule form' of a first-class job of a renovation, as against separate negotiations of contractors who are familiar only with the business of the trades they represent."

The FHA bulletin outlines some facts concerning "cooperative contracting" as follows:

"Members of these cooperatives continue to function as leaders in the trades with which they are directly connected. They make their inspection of the properties to be repaired and improved then prepare their bids. Instead of submitting these estimates to the property owners, however, they turn them in to the agent of the cooperatives.

"If the modernization job calls for the employment of painter, heater and plumber, carpenter, mason, electrician, roofer, sheet metal worker, and plasterer all submit their bids to the cooperatives. When the contract is obtained and the work completed they collect their share of the total.

"The property owner likewise shares in the advantages offered by such a set-up. He knows precisely what the full job is going to cost him at the outset and deals with one instead of a group of contractors. Masons, carpenters, plumbers, etc., being members of the organization know just when the job will be ready for their workmen and lost time is avoided. Nor does the individual lose time in attending to the financial aspects of the matter, since this can be handled by the secretary of the cooperative. This saving in time and effort should be reflected in the total estimate submitted to the property owner.

"Outstanding benefit to be found in such an arrangement, however, is that it simplifies and puts on a practical basis the solicitation of new business for the building trades.

"Property owners are busy men and many of them at this particular time have their own business worries. Field workers of the FHA and local modernization committees report that one of the most difficult parts of their task is to get owners to make a thorough inspection of their dwellings or business places for possible needed repairs.

"If such properties are urgently in need of modernization; if such improvements would require the attention of plumber, carpenter, painter, sheet metal man, etc., separate calls by business getters in the employ of these various contractors might, by taxing the owner's patience, ruin the chances of getting any contract whatever.

"The general contractor or agent for a building trades cooperative may have only a superficial knowledge of the plumbing or carpentering trades but he can make a preliminary inventory of the building's needs then arrange and appoint for his specialists in these lines to call together at a later time.

"There are other sound reasons why these inter-trade associations and partnerships should be given local housing campaign support. They can work to better effect through such cooperatives and every business man must by this time realize that the problem of obsolete and uneconomic buildings must be solved before a community can be rated financially solid.

"Another movement with which building trades contractors might profitably identify themselves is the community statistical survey plan which had its inception in the Seattle district. In this work a group of skilled workers make a thorough inspection of each section allotted to them by the local modernization campaign committee and then report the needs of each dwelling or business property visited. A tie-in with this survey plan should afford building contractors the best opportunity for locating fertile fields or localities in which their agents can work to effect.

"Before any contractor takes the field in the hunt for new business he should thoroughly inform himself of the provisions of the easily understood National Housing Act and thoroughly digest the simple rules and regulations as laid down by the FHA.

"He should be prepared to answer any question the property owner may ask regarding procedure required in the application for a loan under the modernization credit plan. He needs vitally to know the rules governing the eligibility of equipment it is proposed to install. He should explain at the outset that the government itself makes no loans. That such loans are made by local financing agencies and that they may run for from one to three years at interest rates 4 to 5 per cent lower than the best previously obtainable under the instalment paying plan. He should explain that no co-signers are required on the note given and that there are no legal, recording or other fees in the servicing charges.

"Loans today, less than eight weeks after the launching of the Better Housing campaign, are being made at the rate of more than a million dollars a day and the 'cash from savings' being spent in this same cause is perhaps double that amount. This means that more than one billion dollars of new cash business will be offered the building trades within the next 12 months."

EH&FA Promotion Tells Value of Appliances

CHATTANOOGA — Another promotion piece—this time a very small one—has been brought out by the Electric Home and Farm Authority to call attention of Tennessee Valley residents to the advantages of electrical appliances.

Of a size suitable for handout or direct-mail use, the folder pictures a small kitchen equipped with an electric range and refrigerator and says, "EH&FA now puts a cool, clean, efficient electric kitchen within your reach. EH&FA is an agency of your government created to help you avail yourself of electricity at greatly reduced rates."

Two bits of copy on the other side call attention to the TVA emblem, tell what it means. Typical excerpt: "EH&FA through cooperation with America's electric appliance manufacturers has been able to bring you certain appliances at prices far lower than you have been able to buy them heretofore. Each dealer who has been approved by your government to sell these appliances can be identified by the card (TVA emblem) shown on the opposite page."

Revere Opens District Office in Dallas

NEW YORK CITY—Revere Copper & Brass, Inc., with executive office at 230 Park Ave. here, has opened an office at 804 Tower Petroleum building, 1905 Elm St., Dallas, Tex.

Newell Says Winter Sales Will Be Good

DAYTON — Prospects for winter buying of refrigeration products are good, H. W. Newell, vice president in charge of sales of Frigidaire Corp. here, said Oct. 22 following a swing through states east of the Rockies in which he and members of his staff discussed current conditions with the Frigidaire sales organization.

From information gathered from dealer, department store, and utility outlets, he predicts that pre-Christmas sales volume this year will be the largest in several years.

He was accompanied on the swing by Frank R. Pierce, sales manager; Charles T. Lawson, manager, household division; and Lee A. Clark, sales planning manager.

Regional managers who traveled with the party in their individual areas were: John S. Pfeil, New England; J. T. Collins, New York; T. A. Farrell, east central; H. T. Mattern, south eastern; L. F. Skutt, Great Lakes; R. D. Van Dyke, south western; L. W. Curl, western; and E. D. Davis, Rocky Mountain; R. G. Hutchison, Pacific regional manager, made an independent tour of the area west of the Continental Divide.

Universal Distributor Uses Bus as Showroom

FORT EDWARD, N. Y.—Sacandaga Electric Supply Co. here recently equipped a bus with a line of Universal products, including refrigerators, washers, vacuum cleaners, and small electric appliances, and sent it on a trip to all dealers throughout the New York territory.

The bus was in charge of H. E. Case, special representative of Sacandaga Electric Co. F. C. Collins, district representative of Landers, Frary & Clark, manufacturer of Universal products, supervised refrigerator presentations to the dealers.

QUIET

—because of

VULCANIZED RUBBER CRADLE MOUNTING

The owner of an electric refrigerator or air conditioner doesn't want to "put up" with noises and vibration from the electric motor—and he doesn't *have* to—when that motor is a Delco. For in Delco motors, quietness is assured by a special *Vulcanized Rubber Cradle Mounting*. The rubber is vulcanized to two plates, one attached to the motor and one to the mounting bracket. These two plates hold the rubber permanently in place, yet permit it to absorb all vibrational noises. Manufacturers *know* that owners appreciate the quietness which this feature provides. They know that they can always count on the quiet operation of Delco motors—just as surely as they can rely on Delco's all-round dependability and long life. As a result, they are turning to Delco more and more when engineering electric motors into refrigerators and air conditioners.

NRA MEMBER U.S. WE DO OUR PART

DELCO PRODUCTS CORPORATION, DAYTON, OHIO

AIR CONDITIONING SPECIFICATIONS

THE first tabulation of specifications ever attempted by ELECTRIC REFRIGERATION NEWS on refrigerated air-conditioning equipment is presented in the following pages of this issue. The data were all furnished through the cooperation of the various manufacturers, who filled out detailed questionnaires prepared by the editors.

The survey is as complete as it is possible to make it at this time. A number of manufacturers declined to furnish data because they are planning to bring out new models soon which will render present specifications obsolete. Those using this information must realize that it covers *1934 equipment.* When new equipment is on the market next year, these specifications will be brought up to date.

Specifications are divided into four general classes: (1) self-contained room air conditioners, with the compressor furnished by the manufacturer inside the cabinet (pages 6 and 7); (2) floor-type air-conditioning cabinets for remote installation of the compressor (pages 9 and 10); (3) suspended-type, overhead air conditioners for remote installation (pages 11 and 12); and (4) duct-type equipment which is usually installed in a basement or other convenient place from which ducts distribute the air (pages 12 and 13).

Refrigeration capacities were requested in B.t.u.'s per hour with an average refrigerant temperature of 40° F., and with 80° F. entering air at a 55 per cent relative humidity. Heating capacities were requested for a 2-lb. steam supply, with 60° F. entering air dry-bulb temperature at 40 per cent relative humidity. Where manufacturers use some other standard set of conditions for rating their equipment, the variations are noted.

"GENUINE DETROIT"

Synonymous for over fifty years with

DEPENDABILITY AND PRECISION Manufacture

● No installation is better than the instruments that control it. "Genuine Detroit" controls and expansion valves insure perfect control, customer satisfaction—and safeguard your reputation.

DETROIT LUBRICATOR COMPANY

DETROIT, MICH., U. S. A.

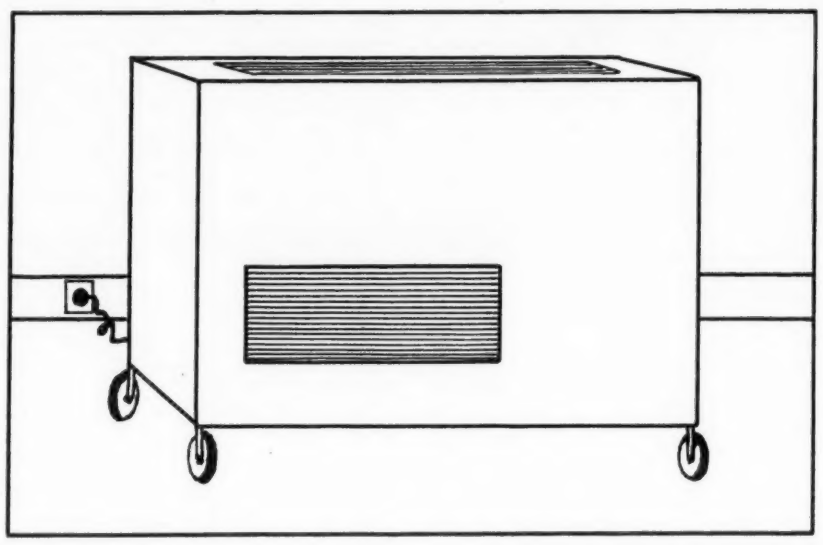
Canadian Representative: Railway & Engineering Specialties, Ltd., Montreal, Toronto & Winnipeg

● THERMOSTATIC EXPANSION VALVES: No. 673, No. 674 and No. 785 for various sizes and types of installations. Always keep evaporators full of refrigerant.

● No. 683-R SOLENOID VALVE
Controls the flow of refrigerant on liquid or suction line. Current consumption approximately 13 watts. Supplied with orifices up to ¼".

● No. 250 DUAL PRESSURE CONTROL
For low side pressure or temperature on methyl chloride, SO^2 or Freon commercial refrigeration units in combination with high pressure cut-out. Both features in one instrument. No. 250 Single Control also available for low-side pressure or temperature only.

Self-Contained Conditioners



Self-contained cabinet-type air conditioners, in which the compressor is built into the cabinet as part of the complete outfit. These are used for single rooms, and are as portable as present design permits, the only connections required being a flexible electrical supply cord, a water supply hose, and a drain. One or two makes noted below employ air-cooled condensers, and have an outside air connection through which heat is discharged, thus eliminating the requirement of a water supply hose.

De La Vergne

De La Vergne Engine Co., Division of Baldwin-Southwark Corp., Philadelphia, Pa.

Self-contained room air conditioners, with a hermetically sealed welded-in-steel compressor. Models 110, 115, and 140 are air cooled, with provision for reversing the refrigeration cycle for heating in winter. These have two separate fans, as specified below, one to circulate room air, the other to circulate the condenser air—which is drawn in from a window vent, forced through the air-cooled condenser, and out another window vent. Condensate in these three models is evaporated into the condenser air stream in summer operation.

Model 140 is suitable for overhead suspension. Model 215 is a water-cooled unit, without the reversed refrigeration feature. A steam heating coil is optional on this model.

Model No.	110	115	140	215
Dimensions (Overall)				
Height (in.)	41	46	19	41
Width (in.)	19	20	60	19
Depth (in.)	52	54	66	52
Compressor				
No. of cylinders	2	2	2	2
Bore (in.)	1¾	1¾	2⅜	1¾
Stroke (in.)	1-1/16	1½	2⅛	1½
Compressor speed (r.p.m.)	1750	1750	1750	1750
Size of motor (hp.)	1½	2	7½	2
Normal refrigerant charge (lbs.)	6.5	7.5	13	7.5
Blower				
Diameter of room air blower (in.)	9½	9½	12	9½
Diameter of condensing air blower (in.)	11½	11½	12*	...
Blower speed (r.p.m.)	1150	1750	1750	850
Size of blower motor (hp.)	⅓	3/5	1	¼
Total circulation of room air (c.f.m.)	500	600	1000	600
Condensing air circulation (c.f.m.)	800	1000	2000	...
Maximum fresh air intake (%)	25	25	50	25
Surfaces				
Area of cooling surfaces (sq. ft.)	250	250	500	250
Area of heating surfaces (sq. ft.)	250	250	500	125
Refrigeration Capacity (B.t.u./hr.)				
Total capacity	13000	18000	48000	18000
Weight, net (lbs.)	1000	1200	1500	1200
Total shipping weight (lbs.)	1200	1400	1700	1400

*This model has two fans in condenser air stream.

* * *

Functions Performed
Models 110, 115, and 140 (which have reversed refrigeration) perform heating, cooling, circulating, humidifying, dehumidifying, and cleaning. Model 215 does all functions but heating and humidifying (a steam coil is optional with this model).

Compressor
Make of compressor.....De La Vergne
Type of compressor motor.....Induction

Refrigerant
Refrigerant used.....Freon
Type of refrigerant control.....High pressure float valve

Cabinet
Type of cabinet.....Wood or steel
Finish of cabinet.....As desired

Blower
Type of blower.....Centrifugal
Type of blower motor.....Single-phase induction

Air Circulating System
Location of air intake.....Model 140—face of unit; others—lower right of cabinet
Location of air discharge.....Model 140—face of unit; others—across top rear
Fresh air intake provision.....Yes

Surfaces
Make of cooling coil.....McCord
Cooling coil tubing.....Copper
Cooling coil fins.....Copper
Make of heating coil.....All but model 215—McCord
Heating coil tubing.....Model 215—brass or aluminum; others—copper
Heating coil fins.....Model 215—brass or aluminum; others—copper

Humidifying and Cleaning
Type of humidifier.....Humidification obtained from outside air condensate; can be augmented if desired
Type of filter.....Dry

Controls
Humidistat optional.

Westinghouse

Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa.

Self-contained cabinet (unit in base of cabinet), for cooling, dehumidifying, and cleaning.

Model No. SW-05

Dimensions (Overall)
Height (in.) 26⅝
Width (in.) 38¾
Depth (in.) 13½

Compressor
No. of cylinders 4
Bore (in.) 1
Stroke (in.) ..... ⅞
Compressor speed (r.p.m.).....1725
Size of motors (hp.) (2)..... ¼
Normal refrigerant charge (lbs.)..... 3½

Blower
Diameter of wheel (in.)..... 10¼
Blower speed (r.p.m.) 910
Size of blower motor (hp.)..... 1/120
Total circulation (c.f.m.).....225

Refrigeration Capacity (B.t.u./hr.)
Dehumidification 2610
Sensible cooling 4460
Total capacity 7070

Weight
Net weight (lbs.) 345
Total shipping weight (lbs.) 470

Price $425

Functions Performed
Cooling, dehumidifying, and circulating.

Compressor
Make of compressor.....Westinghouse hermetic
Make of compressor motor..Westinghouse
Type of compressor motor..Capacitor for single voltages; squirrel cage for polyphase type
Type of motor starter.....Magnetic
Is high safety cut-out provided.....Yes
Type of compressor control....Manual or automatic

Refrigerant
Refrigerant used .....Freon
Type of refrigerant control..Thermostatic expansion valve

Cabinet
Make of cabinet .....Westinghouse
Finish of cabinet.....Walnut, mahogany or micarta

Blower
Make of blower .....Westinghouse
Type of blower .....Screw
Make of blower motor.....Westinghouse
Type of blower motor.....Capacitor

Air Circulating System
Location of air intake.....Ends
Location of air discharge.....Top
Fresh air intake provision.....None
Make and type of discharge grille .....Westinghouse vane

Surfaces
Cooling coil tubing .....Copper
Cooling coil fins .....Copper

Controls
Thermostat optional and water regulating valve.

Thermal Units

Thermal Units Mfg. Co.
39 E. Loomis St., Chicago, Ill.

Self-contained room air-conditioning unit.

Model No.	A	B	C
Dimensions (Overall)			
Height (in.)	35	43	45
Width (in.)	29	27	34
Depth (in.)	13	19	18
Compressor			
No. of cylinders	8	8	8
Bore (in.)	9/16	25/32	25/32
Stroke (in.)	⅞	1⅛	1⅛
Compressor speed (r.p.m.)	1750	1150	1750
Size of motor (hp.)	½	1	1½
Normal refrigerant charge (lbs.)	4	8	12
Blower			
Diameter of wheel (in.)	7	12	15
Blower speed (r.p.m.)	500	500	500
Size of blower motor (hp.)	Driven from compressor motor		
Total circulation (c.f.m.)	450	600	750
Surfaces			
Area of heating surfaces (sq. ft.)	As required		
Refrigeration Capacity (B.t.u./hr.)			
Total capacity	6000	12000	18000
Heating Capacity	As required		
Humidification Capacity			
Lbs. of water per hour.	8	12	16
Weight			
Net weight (lbs.)	295	490	600
Shipping weight (lbs.)	365	600	700
Price	$325	$500	$625

Functions Performed
Cooling, dehumidifying, cleaning, and circulating, with heating and humidifying if desired.

Compressor
Make of compressor.....Thermal
Make of compressor motor.....Wagner
Type of compressor motor...Capacitor or repulsion-induction
Make of motor starter....Cutler-Hammer
Is high safety cut-out provided.....Yes, Penn Switch

Refrigerant
Refrigerant used .....Freon
Type of refrigerant control..Thermostatic expansion valve

Cabinet
Make of cabinet.....Own
Finish of cabinet.....Walnut

Air Circulating System
Location of air intake.....A model—end; others—rear
Location of air discharge.....Top
Fresh air intake provision.....If desired
Make of discharge grille.....Uni-Flo

Surfaces
Make of cooling coil.....Own
Cooling coil tubing.....Aluminum
Cooling coil fins.....Aluminum
Make of heating coil.....Own
Heating coil tubing.....Aluminum
Heating coil fins.....Aluminum

Humidifying and Cleaning
Is filter provided.....Yes
Make of filter.....Spun glass

Controls
Penn water-regulating valve. Liquid line solenoid valve, humidistat, and thermostat furnished if desired.

Servel

Servel Sales, Inc., Evansville, Ind.

Self-contained room cooler, providing all functions of summer air conditioning.

Model No. ACPU-101

Dimensions (Overall)
Height (in.) 31
Width (in.) 66½
Depth (in.) 14½

Compressor
No. of cylinders 2
Bore (in.) 2⅛
Stroke (in.) 2
Size of motor (hp.) 1
Normal refrigerant charge (lbs.)..... 3

Blower
Diameter of wheel (in.) 6
Blower speed (r.p.m.) 900
Size of blower motor (hp.) 1/30
Total circulation (c.f.m.) 550
Maximum fresh air intake (%)..... 50

Surfaces
Area of cooling surfaces (sq. ft.).... 87
Area of heating surfaces (sq. ft.).... 45

Refrigeration Capacity (B.t.u./hr.)
Total capacity 12000

Heating Capacity (B.t.u./hr) 26000

Humidification Capacity
Gals. of water per hour 1

Functions Performed
Cooling, circulating, dehumidifying, and cleaning.

Compressor
Make of compressor .....Servel
Make of compressor motor.....Wagner
Type of compressor motor.....Repulsion-induction
Make of motor starter.....Allen-Bradley
Is high safety cut-out provided.....Yes
Type of compressor control.....Pressure

Refrigerant
Refrigerant used .....Methyl chloride
Type of refrigerant control..Thermostatic expansion valve

Cabinet
Make of cabinet .....Servel
Finish of cabinet .....Walnut

Blower
Type of blower .....Multi-blade
Make of blower motor.....Wagner
Type of blower motor .....Reactance

Air Circulating System
Location of air intake .....Top
Location of air discharge .....Top
Fresh air intake provision .....Yes
Make of discharge grille.....Uni-Flo

Surfaces
Make of cooling coil .....Servel
Cooling coil tubing .....Copper
Cooling coil fins .....Aluminum
Make of heating coil .....Servel
Heating coil tubing .....Copper
Heating coil fins .....Copper

Humidifying and Cleaning
Type of humidifier .....Spray
Make of filter.....American Air Filter or "Dustop"

Controls
Humidistat, thermostat, liquid line solenoid valve, air by-pass dampers, and water-regulating valve.

SPECIFICATIONS

Self-Contained Conditioners (Continued)

Kelvinator

Kelvinator Corp., Detroit, Mich.

Self-contained air conditioners providing all functions.

Continuous tubing in all heating and cooling coils, thus eliminating soldered connections and minimizing the possibility of leaks. Down-draft coils, accelerating drainage of condensed moisture, minimizing re-evaporation, and providing accurate humidity control and high cooling efficiency.

Three-speed capacitor motors with fully enclosed rubber-mounted fans. Automatic control of temperature and humidity. Complete unit construction with removable cabinet panels, providing accessibility for removal of filter, drain pans, etc.

Model No.	SC50DH	SC70DH SC100DH	SC40DC	SC80DC SC60DC
Dimensions (Overall)				
Height (in.)	55¼	58¾ 58¾	58¾	58¾ 62⅝
Width (in.)	34⅞	34⅞ 43⅜	34⅞	43⅜ 43⅜
Depth (in.)	19⅞	19⅞ 19⅞	19⅞	19⅞ 19⅞
Compressor				
No. of cylinders	2	2 2	2	2 2
Bore (in.)	1½	1½ 1-13/16	1½	1-13/16 1-13/16
Stroke (in.)	1¾	1¾ 2½	1¾	2½ 2½
Compressor speed (r.p.m.)	475	640 490	475	375 490
Size of motor (hp.)	½	¾ 1	½	¾ 1
Normal refrigerant charge (lbs.)	6	9 9	9	9 9
Blower				
Blower speed (r.p.m.)	860	845 845	845	845 1145
Size of blower motor (hp.)	1/20	1/20 1/20	1/20	1/20 1/10
Total circulation (c.f.m.)	190	290 400	290	400 500
Refrigeration Capacity (B.t.u./hr.)				
Total capacity	5500	8500 12500	6700	9800 12900
Heating Capacity				
B.t.u./hr. with a 2-lb. steam supply, 70° F. entering air dry bulb, and 40% relative humidity	7600	14600 7600	14600	22500
Humidification Capacity				
Lbs. of water per hour	78	150 78	150	232
Weight, net (lbs.)	580	630 750	630	750 850
Total shipping weight (lbs.)	640	700 825	700	825 925

* * *

Functions Performed

Cooling, dehumidifying, circulating and cleaning. Heating and humidifying is optional on all but model SC50DH.

Compressor

Make of compressor ..... Kelvinator
Type of compressor ..... Optional
Type of motor starter ..... Magnetic
Is high safety cut-out provided ....Yes
Type of compressor control .....Pressure

Refrigerant

Refrigerant used ..... Freon
Type of refrigerant control..Thermostatic expansion valve

Cabinet

Finish of cabinet ..... Lacquer

Blower

Type of blower ..... Centrifugal
Type of blower motor...3-speed capacitor

Air Circulation System

Location of air intake ..... Sides
Location of air discharge ..... Top
Type of discharge grille.....Multi-vane

Surfaces

Make of cooling coil ..... Kelvinator
Cooling coil tubing ..... Copper
Cooling coil fins ..... Copper
Make of heating coil ..... Kelvinator
Heating coil tubing ..... Copper
Heating coil fins ..... Copper

Humidifying and Cleaning

Type of humidifier ..... Spray
Type of filter ..... Dry

Controls

Thermostat, liquid line solenoid valve, and water regulating valve standard. Humidistat where necessary.

Strang

Strang Air Conditioning Corp.
Kansas City, Mo.

A self-contained room cooler, with compressor in base. Portable to the extent that only an electrical cord connection and a window vent connection is required. Heat eliminated from condenser by evaporation, and exhausted through the window connection.

Model No.	A	B	C
Dimensions (Overall)			
Height (in.)	44	48	56
Width (in.)	32	40	36
Depth (in.)	17½	19	28
Compressor			
No. of cylinders	2	4	2
Bore (in.)	2¼	1¾	2¼
Stroke (in.)	1⅝	1¾	3
Compressor speed (r.p.m.)	450	500	440
Size of motor (hp.)	¾	1	1½
Normal refrigerant charge (lbs.)	4½	6	6
Blower			
Diameter of wheel (in.)	8	10	10
Size of blower motor (hp.)	1/40	1/40	1/40
Total circulation (c.f.m.)	300	350	400
Surfaces			
Area of cooling surfaces (sq. ft.)	45	60	60
Refrigeration Capacity (B.t.u./hr.)			
Total capacity	7000	12000	16000
Humidification Capacity			
Lbs. of water per hour.	3½	7	8
Weight, net (lbs.)	450	550	700
Total shipping (lbs.)	575	675	850
Price	$297	$357.50	$397.50

Functions Performed

Cooling, dehumidifying, humidifying, cleaning, and circulating.

Compressor

Make of compressor.....Models A & C—Copeland; model B—Deissler
Make of compressor motor.....Century
Type of compressor motor.....Repulsion-induction
Is high safety cut-out provided.....Yes

Refrigerant

Refrigerant used .....Methyl chloride
Type of refrigerant control..Thermostatic expansion valve

Cabinet

Finish of cabinet....Hand-grained walnut

Blower

Type of blower.....Bladed fan
Make of blower motor.....Century
Type of blower motor.....Repulsion-induction

Air Circulating System

Location of air intake.....Top rear
Location of air discharge.....Front
Make and type of discharge grille....Own louvered

Surfaces

Make of cooling coil...Young Radiator Co.
Cooling coil tubing.....Copper
Cooling coil fins.....Copper

Humidifying and Cleaning

Type of humidifier.....Spray
Type of filter.....Wet or dry—optional

Controls

Thermostat, liquid line solenoid valve, water-regulating valve. Manual humidity control.

Ilg Spot Kooler

Ilg Electric Ventilating Co.
2850 N. Crawford Ave., Chicago, Ill.

Self-contained room coolers performing cooling, dehumidifying, and circulating. Compressor mounted in bottom of cabinet. Models 10 and 20 are water cooled; model 30 is air cooled, requiring connection to a window panel for outside air.

Model No.	10	20	30
Dimensions (overall)			
Height (in.)	46	48	48
Width (in.)	30	34	32
Depth (in.)	18	22	24
Compressor			
No. of cylinders	2	2	2
Size of motor (hp.)	½	1½	1
Normal refrigerant charge (lbs.)	2	2	2
Blower			
Blower speed (r.p.m.)	1140	1140	1140
Total circulation (c.f.m.)	280	600	280
Refrigeration Capacity (B.t.u./hr.)			
Total capacity	8660	14000	8660
Weight, net (lbs.)	350	550	450

Functions Performed

Cooling, dehumidifying, and circulating.

Compressor

Make of compressor.....Ilg

Refrigerant

Refrigerant used.....Methyl chloride
Type of refrigerant control..Thermostatic expansion valve

Cabinet

Make of cabinet.....Ilg
Finish of cabinet.....Walnut

Blower

Make of blower.....Ilg
Type of blower.....Propeller fan
Make of blower motor.....Ilg

Air Circulating System

Location of air intake.....Top of back
Location of air discharge.....Top front

Controls

Condensing-water valve in models 10 and 20.

Zephyr

Savage Arms Corp.
100 E. 42nd St., New York City

Self-contained air-washer type of air-conditioning unit with year-'round functions.

Model No.	60
Dimensions (Overall)	
Height (in.)	32
Width (in.)	50
Depth (in.)	17
Compressor	
No. of cylinders	2
Size of motor (hp.)	½ & ¾
Normal refrigerant charge (lbs.)	5
Blower	
Blower speed (r.p.m.)	700
Size of blower motor (hp.)	1/50
Total circulation (c.f.m.)	250
Refrigeration Capacity (B.t.u./hr.)	
Total capacity	9000
Heating Capacity (B.t.u./hr.)	10000
Humidification Capacity	
Lbs. of water per hour	6

Functions Performed

Heating, humidifying, cooling, dehumidifying, cleaning, and circulating.

Compressor

Type of compressor motor.....Repulsion-induction
Make of high safety cut-out..Penn Switch

Refrigerant

Refrigerant used .....Freon
Type of refrigerant control..Thermostatic expansion valve

Cabinet

Make of cabinet.....Own
Finish of cabinet.....Walnut

Blower

Type of blower.....Aluminum wheel, forward curved blades

Air Circulating System

Location of air intake.....Ends
Location of air discharge.....Top
Fresh air intake provision.....If desired

Surfaces

Make of cooling coil.....Own
Cooling coil tubing.....Copper
Cooling coil fins .....Copper
Make of heating coil.....Own
Heating coil tubing .....Copper
Heating coil fins .....Copper

Humidifying and Cleaning

Type of humidifier.....Washer
Type of filter .....Washer

Controls

Water-regulating valve. Humidistat, thermostat, and liquid line solenoid valve optional.

Frigidaire and G-E Specifications Next Week

Specifications on Frigidaire and General Electric air-conditioning equipment were not received in time for inclusion in this issue, and will be published next week. Data on Chrysler's Airtemp air conditioner, sold by Temperature Corp., are not yet in shape for publication (see letter on page 8).

Year 'Round Carrier System To Condition Basement

INDIANAPOLIS—William H. Block Co., department store here will install a Carrier central plant system for all-year air conditioning in its basement, which includes a restaurant, first floor, first floor mezzanine, and second floor.

The system, which has a refrigerating capacity exceeding 300 tons will serve 107,900 sq. ft. of floor area.

Beauty parlor on the fourth floor will be cooled by a separate Carrier unit air-conditioning system.

Winter Conditioning Plant Installed by Wayne University

DETROIT—As a part of its $300,000 reconstruction program, Wayne University of this city, has, during the past summer, installed a complete new winter air-conditioning plant.

The system, designed by G. H. Broom, CWA architectural engineer, accomplishes the four requisites of winter air conditioning — heating, humidifying, cleaning, and circulating. It conditions 250,000 cu. ft. of air every minute.

Until this summer, the building had been heated with an ordinary warm air furnace arrangement. The air was not humidified. Because of the lack of humidification it was necessary to use excessive amounts of fuel to raise room temperatures to normal.

The entire system handles 15,000,000 c.f.m. or a total of 560 tons of fresh air every hour it is in operation. The new mechanical equipment was added at an approximate expense of $24,000.

The plant which conditions the air in nearly 190 rooms covering a floor space of over 20,000 sq. ft., is equipped with four conditioning units, the larger having a capacity of 100,000 c.f.m. and the three smaller ones, 50,000 c.f.m. each.

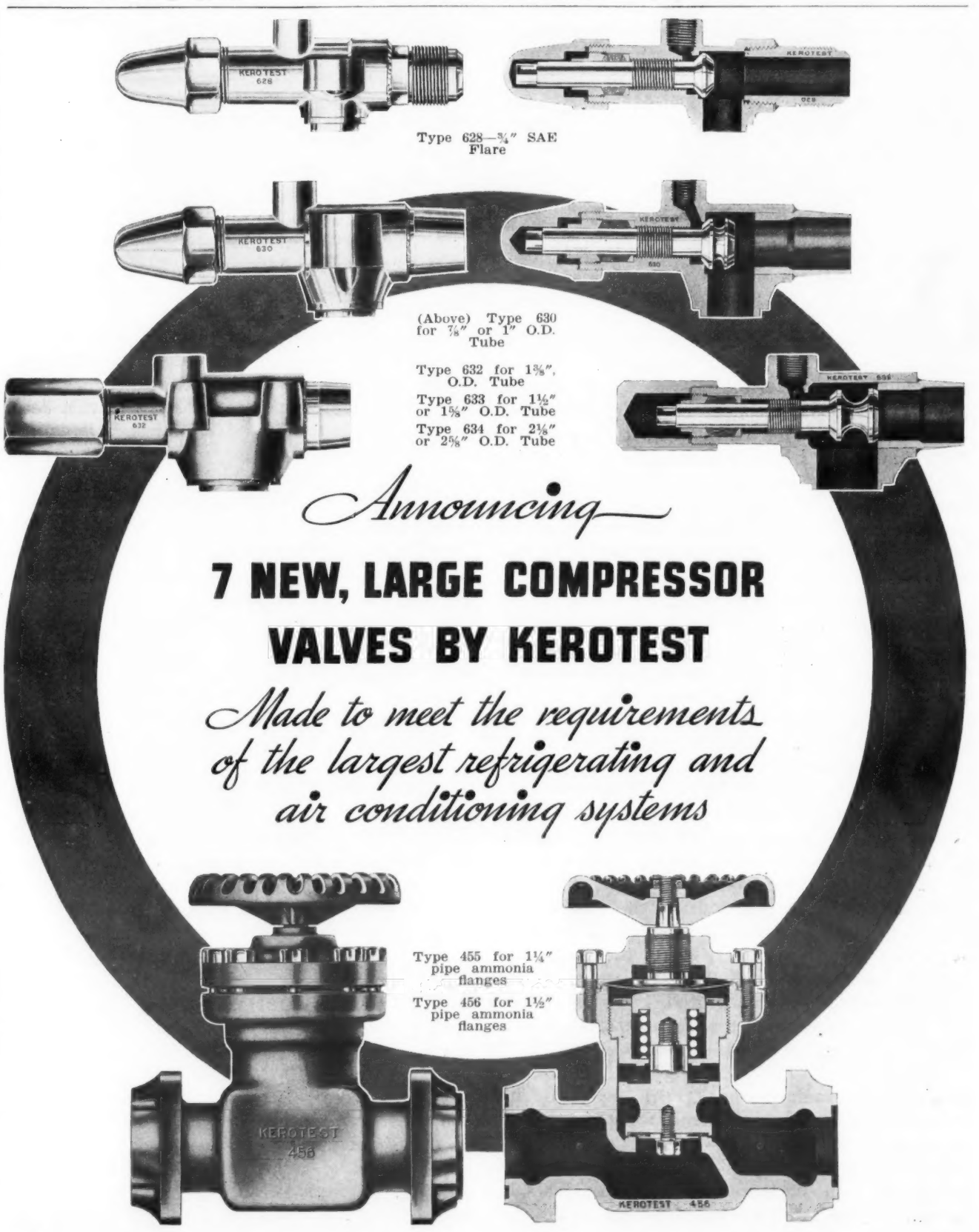
Two air washers clean 250,000 c.f.m. The larger one has a capacity of 150,000 c.f.m. and the second, 100,000 c.f.m. The two spray-type washers use 600 gallons of water per minute, the smaller using 200 gallons, and the larger using 400 gallons.

The wheel diameter of the largest fan is 99 in. and that of the smaller ones is 72 in. The larger fan which turns at 450 r.p.m. is driven by a 40-hp. General Electric motor and the small ones are driven by 20-hp. G-E motors. The multi-blade fans were designed and built by American Blower Corp. of Detroit.

The fans are connected to three plenum chambers, the largest of which has a volume of 40,000 cu. ft. The remaining two are considerably smaller. The large plenum chamber is served by the large fan and one of the small ones.

The grilles over the two fresh air intakes have a total area of 330 sq. ft., and the air intake ducts have a working capacity of 250,000 c.f.m. The small louver, located on the south side of the building, serves the system with 100,000 c.f.m. and the larger one on the north exposure serves 150,000 c.f.m.

A new split steam heating system has been installed, utilizing the old warm air furnaces. There are four boilers rated at 150 hp. each. The large fan blows the fresh air across a coil which has a heating surface of 7,300 sq. ft. The smaller units are equipped with heating coils of 5,000 sq. ft. each.


KEROTEST 628
KEROTEST 630
KEROTEST 632
KEROTEST 633
KEROTEST 634
Type 628—¾" SAE Flare
(Above) Type 630 for ⅞" or 1" O.D. Tube
Type 632 for 1⅜", O.D. Tube
Type 633 for 1½" or 1⅝" O.D. Tube
Type 634 for 2⅛" or 2⅝" O.D. Tube
Announcing
7 NEW, LARGE COMPRESSOR VALVES BY KEROTEST
Made to meet the requirements of the largest refrigerating and air conditioning systems
KEROTEST 455
KEROTEST 456
Type 455 for 1¼" pipe ammonia flanges
Type 456 for 1½" pipe ammonia flanges

Ever abreast of the advancing requirements of the industry, Kerotest presents 7 large valves primarily designed for use on large commercial and air conditioning unit compressors.

Types No. 628 and No. 630 are made of forged brass while types No. 632, 633 and No. 634 are made of forged steel making available Kerotest quality Compressor Valves up to 2⅝".

Forged Steel, in the larger valves, was selected by Kerotest engineers, after careful tests, as being the ideal material for compressor valves of this size.

Also illustrated are the new Kerotest Type 455 and 456 Diaphragm Packless Globe Valves in 1¼" and 1½" sizes, with four bolt hole, square ammonia type flanges . . . . generally used on large commercial and air conditioning installations.

Note the bolted, flanged-bonnet construction, which permits servicing these large valves while contained on the tubing lines without removing the valve from the line of service—an exclusive Kerotest feature, common to all Kerotest Diaphragm Packless Valves, and used extensively by one of the world's leading manufacturers of refrigeration systems.

Write for quotations and detailed particulars.

KEROTEST

KEROTEST MANUFACTURING CO. . . . PITTSBURGH, PA.

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Giving the Public Its Money's Worth

SPEAKING before a dinner given recently in Chattanooga by Electric Home & Farm Authority officials to directors of the Tennessee Valley Authority, David E. Lilienthal, president of Electric Home & Farm Authority, stated:

> "While most of the manufacturers and dealers have been genuinely cooperative, there have been some important exceptions. For example, the trade paper of one such dissenting group has poured out a steady flow of comment designed to discredit the Government's efforts. This minority resents our efforts to bring down prices of equipment; they would like a chance to gouge the unorganized buying public."

Perhaps it is a bit presumptuous to assume that when he speaks of "the trade paper of one such dissenting group" Mr. Lilienthal refers to ELECTRIC REFRIGERATION NEWS. Undoubtedly some of the business papers of other industries which have been affected by the activities of the TVA and EH&FA have had the courage to print the facts about this government venture into business, and to comment judiciously upon them. But inasmuch as the NEWS has published criticism of the program, it seems only just that this paper state its position.

ELECTRIC REFRIGERATION NEWS *does not believe in "gouging the public."* Aside from the ethics of the matter, it's simply an elemental business axiom that gouging the public does not pay—at least, in the long run. This is a high class industry; and it could never have attained, or keep for long, its enviable position were it to engage in dishonest merchandising tactics.

ELECTRIC REFRIGERATION NEWS *does believe in giving buyers their money's worth.* Readers of this paper will surely be glad to testify (and a gratifying large number of them do, by unsolicited letters) that the great amount of valuable information they receive during the course of a year's perusal of the NEWS—plus the candid reporting service of the NEWS which tells the news in an unbiased, uninfluenced, unexpurgated manner almost unprecedented in trade paper publishing—gives them the biggest three dollar's worth they ever received.

Moreover, the NEWS believes that the electric refrigeration industry has given the public its money's worth. The sales record of the industry throughout the depression—when it continued to climb to new heights while most other industries languished—should leave little room for doubt in anyone's mind that buyers have been given real value when they have purchased refrigerators.

This is an industry which has been built on customer satisfaction. "Use the user" has been the universal slogan of manufacturers, distributors, dealers, and salesmen. One of the chief reasons for the amazing success of the industry, is that owners have spread the good word and created desire for the product in the minds of friends and neighbors.

An industry built on this sort of consumer satisfaction is the direct antithesis of a business which has as its fundamental premise "gouging the public." People have bought electric refrigerators because they have proved to be an *economy* to users. Far from being "gouged," buyers have been able to *save money* after their electric refrigerators have been installed. No artificially high set of prices could have made a situation like this possible.

ELECTRIC REFRIGERATION NEWS *believes in giving aid to the needy.* Governmental projects like the CCC, which helps thousands of loose-end boys keep their health and self-respect and at the same time assist their families back home, are undoubtedly worthy. So, too, are public works projects which help artisans and industries which are flat on their backs (examples: welding unemployed musicians into bands and symphony orchestras to give free concerts to a music-hungry public; putting indigent artists to work painting murals in public buildings). But the NEWS cannot approve projects like TVA and EH&FA, which *upset the equilibrium of a notably successful industry and damage portions of it almost beyond repair.*

The electric refrigeration industry does not need government aid. It is one of the few industries which has grown and prospered during the world's financial difficulties. In so doing, it has achieved a delicate balance, off which it has been thrown by the government's tossing of the EH&FA monkey wrench into its works.

Moreover, the public does not need protection from the refrigeration industry. If people were being "gouged" by a set of predatory business men, that would be a different matter. But the weight of the evidence is preponderantly against such a notion. Electric refrigerators are not like food or clothing or other absolute necessities of life; people don't have to buy them. Nor would they, in these times, if they were not convinced they were getting more than their money's worth.

Hence the government's activity in setting itself up as an arbiter of the kind of refrigerators the industry should sell, and the price at which they should be sold, is obviously foolish. More than that, it is actually dangerous and destructive. "The steady flow of comment designed to discredit the government's efforts," of which Mr. Lilienthal speaks, has consisted almost entirely of letters and statements from righteously indignant electric refrigeration dealers and distributors in the Tennessee Valley area, who see the business enterprises which they have been so painstakingly building being shot to pieces by the ruthless and profitless competition which the government is fostering.

One need only turn to back copies of the NEWS to read how unjust the activities of TVA and EH&FA have been to independent merchants. They need not be recounted here, for the story can be read in the own words of those proprietors of small businesses who have found, in the columns of ELECTRIC REFRIGERATION NEWS, an opportunity for stating their case.

Possibilities of further injustice which will likely be wreaked upon other groups by culmination of the Tennessee Valley Authority activities appear to be manifold. That area already has a surplus of developed electric power. The government is now engaged in projects which will more than double the electric power production of the Tennessee Valley. These projects are being completed on taxpayer's money—a great deal of taxpayer's money—obtained not from the Tennessee Valley, but from the country at large. Even if EH&FA succeeds in equipping homes in that territory with "the works" in the line of electrical appliances, only a relatively small portion of the productive capacity of the valley's excess electrical generators will be utilized. That means industries must be fostered in the Tennessee Valley to consume that extra development of electrical power. Thus cheap power made possible by taxation of industry will be used to foster unfair competition to the many businesses which have contributed heavily to the financing of the project.

ELECTRIC REERIGERATION NEWS certainly has no thought of attempting to block the Administration in its efforts to accelerate business recovery. What this paper does say, however, is that in TVA and EH&FA the government has an activity which has already hindered the progress of honest business and which will continue to play hob so long as it is allowed to function in its present manner. Helping those that need help is thoroughly admirable. But sending inexperienced individuals—however noble and lofty-minded they may be—to lead by the hand an industry which knows where it is going and how to get there (and is doing so with full and enthusiastic public approval) is a different matter.

LETTERS

Thanks for the Order

The Scutan Co., Inc.
233 Broadway, New York City
Oct. 29, 1934.

Editor:

We have your advance notice of the expiration of our subscription to ELECTRIC REFRIGERATION NEWS. Needless to say, we wish to continue our subscription, but would like to take advantage of the saving involved in applying for the combination offer of the 1935 REFRIGERATION DIRECTORY along with the ELECTRIC REFRIGERATION NEWS, if this is permissable. We already have a copy of the 1934 edition.

If agreeable, we will forward you our check for $5.00, covering a year's subscription to ELECTRIC REFRIGERATION NEWS and the balance to apply on the 1935 REFRIGERATION DIRECTORY, when this is prepared.

J. D. GRIFFIN,
Manager.

Answer: The 1935 DIRECTORY will probably sell at a higher price because of increased size, but *until the new price is announced,* we will accept orders at the old rate.

Chrysler Data Not Ready

Temperature Corp.
405 Lexington Ave., New York City
Oct. 25, 1934.

Editor:

I am afraid you will have to skip us in this issue as we are just now preparing data you are interested in and it will not be ready for a little time.

J. C. CHAMBERS.

Cooling Function Later

International Heater Co.
Utica, N. Y.

Editor:

On Oct. 13 you wrote us attaching a questionnaire.

When our air-conditioning units were first put on the market we had incorporated with them mechanical refrigeration, but have since omitted this as our knowledge of that phase was so limited.

Work is being done along that line at the present time and we hope possibly by next season to have a more complete line available.

As I understand it you are not interested in listing any equipment that does not at the present time incorporate refrigerating units.

H. F. RANDOLPH,
Sales Manager.

An Old Timer

Herbert Garnett Industrial Mask Co.
1220 Madison Ave., Toledo, Ohio

Editor:

Referring to the news item on page 15 of your Oct. 10 issue:

We appreciate this publicity but hasten to make these corrections. This company has been in business since 1913, and our SO_2 masks have been on the market for years. Recently, however, we developed the Garnett "Black Kat" SO_2 mask.

E. H. WALKER.

Wants Quiet Fans

Electro Devices Co.
340 Cass Ave., Mt. Clemens, Mich.

Editor:

Why is there so little engineering and manufacturing work contributed to designing and building small, quiet, efficient 6 to 7-in. fans, with speeds of 1,500 to 1,700 r.p.m.

A quiet fan is more important than price in refrigeration.

We are in the market for a quantity of quiet fans and do not wish to be compelled to purchase fan motors in order to buy desirable fans.

WM. D. DRYSDALE,
Manager.

Lesson in Photography

House Furnishing Review
1170 Broadway, New York City

Editor:

Some time ago you gave me some information about the Candid Camera. We purchased one and have an F 1 5 lens.

I wonder if you would be good enough to indicate on the attached sheet what speed you used on the various pictures, which I assume were taken by you, and at what number you had the diaphragm when you took these pictures.

I have followed several kinds of instructions without a great deal of luck, so I am interested in getting your system.

JULIEN ELFENBEIN,
Editor.

Answer: On the enclosed picture page from ELECTRIC REFRIGERATION NEWS settings are marked for each picture. They probably won't do you a lot of good, however; for the correct settings for diaphragm and shutter depend entirely on the amount of light available at the time the picture is taken.

For outdoor pictures there is one excellent answer to the problem of determining a correct setting for the camera and that is an electric light meter. Weston makes a good one. A more expensive German meter called the "Photoscop," is made in Leipzig by Excelsiorwerk. Rudolf Kiesemeter of Leipzig, and is notable chiefly for the extreme rapidity with which one can determine settings, and for the wide range it covers. After a little practice with one of these meters only a few seconds are required to obtain a reading which will give you the correct settings for speed and aperture.

Taking pictures indoors is another problem, as no meter now on the market is sensitive enough to register normal artificial light. In general, I have found these settings to be approximately correct: Daytime office pictures taken in offices which have two or more windows admitting sunlight—f:1.5 to f:2 and 1/25 second. In small offices having but one window, use 1/10 second. On cloudy days, or in the very late afternoon, try 1/5 second.

For night shots at banquets, in hotel rooms, and other places where only normal artificial light is available, use an opening of f:1.5 and speeds of 1/2 or 1/5 seconds, according to your own judgment of the brightness of the light and the lightness of the background. Always remember that dark-paneled walls absorb a great deal of light.

For pictures of play sets or speakers on a stage which is lighted by footlights set lens at f:1.5 and the shutter at 1/25 second. If strong spotlight is thrown on the speaker or on the stage, you can set it up to 1/50 second.

For any speed less than 1/50 second the objects you are photographing must be motionless. Otherwise, they will blur the film. For outdoor pictures where there is sufficient light, always use speeds of 1/100 second and more.

Taking shots at 1/2, 1/5, and 1/10 of a second requires a very steady hand; for miniature cameras are quite light and the tiniest jar or movement when snapping a picture spoils the picture.

After all, though, there isn't much anybody can tell you; for learning to judge light and motion is largely a matter of experience.

Air Conditioning Training

627 South Martinson
Wichita, Kan.

Editor:

For a number of years I have been reading about the refrigeration and air-conditioning industries. I have become very much interested in this field. I shall appreciate a statement from you as to what your opinion may be as regards the possibilities and opportunities in this field.

I shall also appreciate your advice on the problem of training for this industry. I have been contemplating a course of training as given by the O. F. Schoeck Schools of Alton, Ill. A friend of mine has advised me that their training is thorough, up-to-date, and efficient.

FRANK S. HARNED.

Answer: We believe air conditioning will, in time, grow to be one of this country's leading industries, requiring many well-trained men. Even now there is a big field for experienced and trained men in air conditioning.

With respect to the Schoeck School, we do not feel qualified to make a recommendation because we have not yet had an opportunity to make a first hand investigation of the school and its facilities.

Air-Conditioning System In News Office

Alfred Teves
Frankfurt, Germany.

Editor:

Referring to your issue of Aug. 29, 1934, on page 12 you show pictures of an air-conditioning system. We would appreciate the name of the manufacturer.

H. TEVES.

Answer: York compressor, Fedders coils, American Blower fans, Minneapolis-Honeywell controls, and Uni-Flo grilles are the principal items of the system.

No Newsstand Sales

79-26 — 154th St.,
Flushing, N. Y.
October 21, 1934.

Editor:

I am training for electric refrigeration with the Utilities Engineering Institute and will appreciate information as to where I can purchase ELECTRIC REFRIGERATION NEWS in New York City; or must I obtain same directly from you.

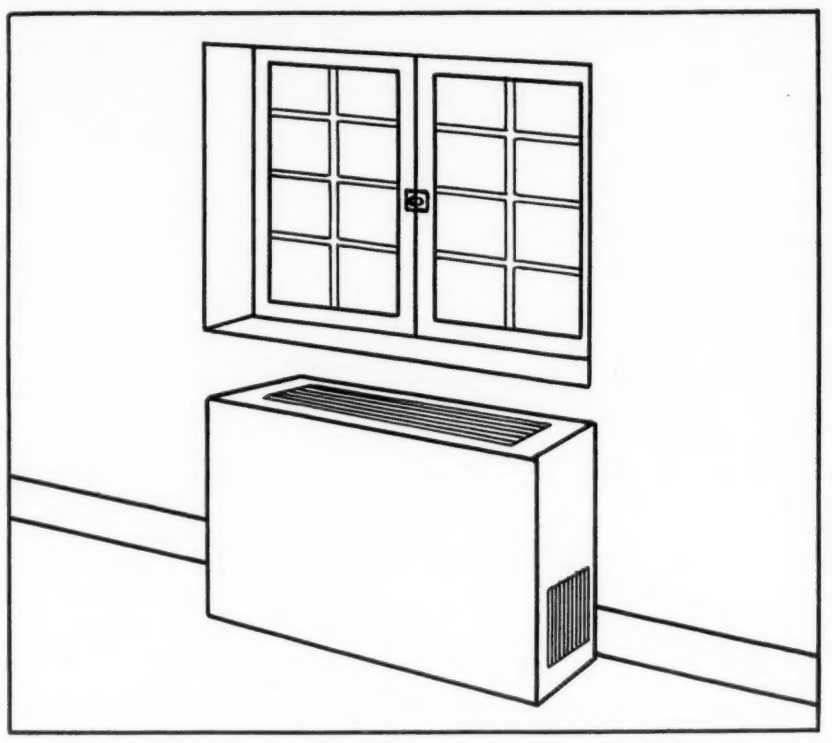
MICHAEL PRADO.

Answer: ELECTRIC REFRIGERATION NEWS is not sold at newsstands and is available by subscription only.

Editor:

I am a very consistent reader of ELECTRIC REFRIGERATION NEWS and value its articles very highly.—W. J. DICKINSON, general sales division, Automatic Washer Co., Newton, Iowa.

Remote Floor-Type Conditioners



Remote floor-type cabinets, compressor installed separately from the cabinet. These are generally used for one room only, and may be furnished refrigeration by direct expansion of refrigerant, by use of brine, or refrigerated water.

Kelvinator

Kelvinator Corp., Detroit, Mich.

Floor-type cabinets for year-'round operation. Continuous tubing in all heating and cooling coils, thus eliminating soldered connections and minimizing the possibility of leaks. Down-draft coils, accelerating drainage of condensed moisture, minimizing re-evaporation, and providing accurate humidity control and high cooling efficiency.

Heat exchangers to give high capacity of condensing units and prevent condensation of moisture on suction lines. Three-speed capacitor motors with fully enclosed rubber-mounted fans.

Complete automatic control of temperature and humidity. Complete unit construction with removable cabinet panels, providing accessibility for removal of filter, drain pans, etc.

Model No.	FT50DH	FT70DH FT100DH	FT150DH FT40DC	FT60DC FT80DC
Dimensions (Overall)				
Height (in.)	30	33 36⅞	33 36⅞	33 36⅞
Width (in.)	34¾	34¾ 43¼	34¾ 43¼	43¼ 43¼
Depth (in.)	14½	17½ 17½	17½ 17½	17½ 17½
Blower				
Blower speed (r.p.m.)	860	845 845	1145 845	845 1145
Size of blower motor (hp.)	1/20	1/20 1/20	1/10 1/20	1/20 1/10
Total circulation (c.f.m.)	190	290 400	500 290	400 500
Refrigeration Capacity (B.t.u./hr.)				
Dehumidification	2500	4500 6600	10000 4500	6600 10000
Sensible cooling	3800	7700 10500	13500 7700	10500 13500
Total capacity	6300	12200 17100	23500 12200	17100 23500
Heating Capacity				
B.t.u./hr. with 2-lb. steam supply, 70° F. entering air dry bulb, and 40% relative humidity	7600	14600 22500	7600	14600 22500
Humidification Capacity				
Lbs. of water per hour	78	150 232	78	150 232
Weight, net (lbs.)	240	275 335	400 275	335 400
Total shipping weight (lbs.)	280	315 380	450 315	380 450

* * *

Functions Performed

Cooling, dehumidifying, cleaning and circulating. Heating and humidifying optional on all but model FT50DH.

Cabinet

Finish of cabinet ..... Lacquer

Blower

Type of blower ..... Centrifugal
Type of blower motor....3-speed capacitor

Air Circulating System

Location of air intake ..... Sides
Location of air discharge.....Top
Type of discharge grille.....Multi-vane

Surfaces

Make of cooling coil ..... Kelvinator
Cooling coil tubing ..... Copper
Cooling coil fins ..... Copper
Make of heating coil ..... Kelvinator
Heating coil tubing ..... Copper
Heating coil fins ..... Copper

Humidifying and Cleaning

Type of humidifier.....Spray
Type of filter ..... Dry

Controls

Thermostatic expansion valve and liquid line solenoid valve standard. Thermostat and humidistat as accessory equipment.

ANSUL
Dependable Refrigerants .....

SULPHUR DIOXIDE

Manufactured under strict laboratory supervision. Absence of moisture and foreign materials made certain through analysis of every cylinder. Forty warehouses can supply you immediately. Write for prices and location of nearest source of supply.

METHYL CHLORIDE

A product backed by Ansul's wide reputation for producing dependable refrigerants. Low moisture and acid content are guaranteed by laboratory analysis of every cylinder. Write for full information and prices.

ANSUL CHEMICAL CO.
MARINETTE - WISCONSIN

Thermal Units

Thermal Units Mfg. Co.
39 E. Loomis St., Chicago, Ill.

Floor-type cabinets for remote installation of refrigerating machine.

Model No.	AR	BR	CR
Dimensions (Overall)			
Height (in.)	30	36	43
Width (in.)	29	34	36
Depth (in.)	13	13	13
Blower			
Diameter of wheel (in.)	7	12	15
Blower speed (r.p.m.)	500	500	5.0
Size blower motor (hp.)	1/20	1/10	1/8
Total circulation (c.f.m.)	450	600	750
Humidification Capacity			
Lbs. of water per hour.	8	12	16
Weight			
Net weight (lbs.)	180	240	30)
Total shipping (lbs.)	240	310	4.0
Price	$140	$175	$195

Functions Performed

Cooling, dehumidifying, circulating, and cleaning. Heating and humidifying optional.

Compressor

Make of compressor.....Optional

Cabinet

Make of cabinet.....Own
Finish of cabinet .....Walnut

Blower

Make of blower.....Own
Make of blower motor.....Optional
Type of blower motor.....Capacitor

Air Circulating System

Location of air intake.....AR models—end; others—rear
Location of air discharge.....Top
Fresh air intake provision.....If desired
Make of discharge grille.....Uni-Flo

Surfaces

Make of cooling coil.....Own
Cooling coil tubing.....Aluminum
Cooling coil fins.....Aluminum
Make of heating coil.....Own
Heating coil tubing.....Aluminum
Heating coil fins.....Aluminum

Humidifying and Cleaning

Type of humidifier.....Own
Is filter provided .....Yes
Type of filter.....Spun glass

Betz Unicool

Betz Unit Air Cooler Co.
6 W. Ninth St., Kansas City, Mo.

Floor-type unit air conditioners in several sizes, all using refrigerated water spray. Specifications on models 2 and 5 only given below. Model 2 has a patented system of individual control.

Model No.	2	5
Dimensions (Overall)		
Height (in.)	90	156
Width (in.)	22	48
Depth (in.)	18	60
Blower		
Total circulation (c.f.m.)	450	13100
Surfaces		
Area of heating surfaces (sq. ft.)	110	960
Refrigeration Capacity (B.t.u./hr.)		
Total capacity	17000	318000
Heating Capacity		
(B.t.u./hr.)	26400	230400
Humidification Capacity		
Lbs. of water per hour	1980	42400
Weight		
Net weight (lbs.)	160	.....
Price, f.o.b. factory	$346	$1344

Functions Performed

Heating, cooling, circulating, humidifying, dehumidifying, and cleaning.

Compressor

Make of compressor.....Any desired

Refrigerant

Refrigerant used.....Any desired
Type of refrigerant control.....Alco thermostatic expansion valve

Cabinet

Finish of cabinet.....Model 2—inner and outer housing of aluminum; larger models—galvanized steel

Blower

Make of blower.....Various

Air Circulating System

Location of air intake.....Near floor
Location of air discharge.....Near top of cabinet
Fresh air intake provision.....Yes

Surfaces

Make of cooling coil....Not used (spray)
Heating coil tubing.....Aluminum
Heating coil fins .....Aluminum

Humidifying and Cleaning

Type of humidifier.....Spray
Type of filter.....None used (spray)

Controls

Humidistat; Alco liquid line solenoid valve; and Barber-Coleman, Detroit Lubricator, or Minneapolis-Honeywell thermostat.

U. S.

U. S. Air Conditioning Corp.
Northwestern Terminal, Minneapolis.

Floor-type cabinet air conditioners, providing year-'round functions. Compressor to be installed remotely.

Model No.	750
Dimensions (Overall)	
Height (in.)	24
Width (in.)	32
Depth (in.)	14
Blower	
Diameter of wheel (in.)	4
Blower speed (r.p.m.)	1200
Size of blower motor (hp.) (2)	1/20
Total circulation (c.f.m.)	350
Surfaces	
Area of cooling surfaces (sq. ft.)	30
Area of heating surfaces (sq. ft.)	30
Refrigeration Capacity (B.t.u./hr.)	
Dehumidification	4000
Sensible cooling	8000
Total capacity	12000
Heating Capacity (B.t.u./hr.)	30000
Humidification Capacity	
Lbs. of water per hour	25
Weight, net (lbs.)	195
Total shipping weight (lbs.)	225

Functions Performed

Cooling, dehumidifying, heating, humidifying, cleaning, and circulating.

Refrigerant

Type of refrigerant control..Thermostatic expansion valve

Cabinet

Make of cabinet.....Own
Finish of cabinet.....As desired

Blower

Make of blower.....Own
Type of blower.....Centrifugal

Air Circulating System

Location of air intake.....Rear at bottom
Location of air discharge.....Top
Make of discharge grille.....Uni-Flo

Surfaces

Make of cooling coil.....Own
Cooling coil tubing.....Copper
Cooling coil fins.....Copper
Make of heating coil.....Own
Heating coil tubing.....Copper
Heating coil fins.....Copper

Humidifying and Cleaning

Type of humidifier.....Spray
Type of filter.....Washer

Controls

Thermostat, humidistat, liquid line solenoid valve, water-regulating valve.

American Blower

American Blower Corp., Detroit, Mich.

Floor-type air-conditioning cabinets for year-'round operation. Cooling medium may be refrigerated water, direct expansion of refrigerant, or cold brine.

Model No.	30	45	60	75
Dimensions (Overall)				
Height (in.)	26	30	34	38
Width (in.)	8	10½	14	18
Depth (in.)	27	34	42	48
Blower				
Blower speed (r.p.m.)	——540 to 1680——			
Size of blower motor (hp.)	——1/70 to 1/10——			
Total circulation (c.f.m.)	——120 to 1250——			
Maximum fresh air intake (per cent)	50	50	50	50
Weight, total shipping (lbs.)	140	230	370	850

Functions Performed

Cooling, dehumidifying, heating, humidifying, cleaning, and circulating.

Refrigerant

Refrigerant used .....Water

Cabinet

Finish of cabinet.....Grained in natural walnut

Blower

Make of blower.....Sirocco
Type of blower.....Centrifugal
Make of blower motor....General Electric

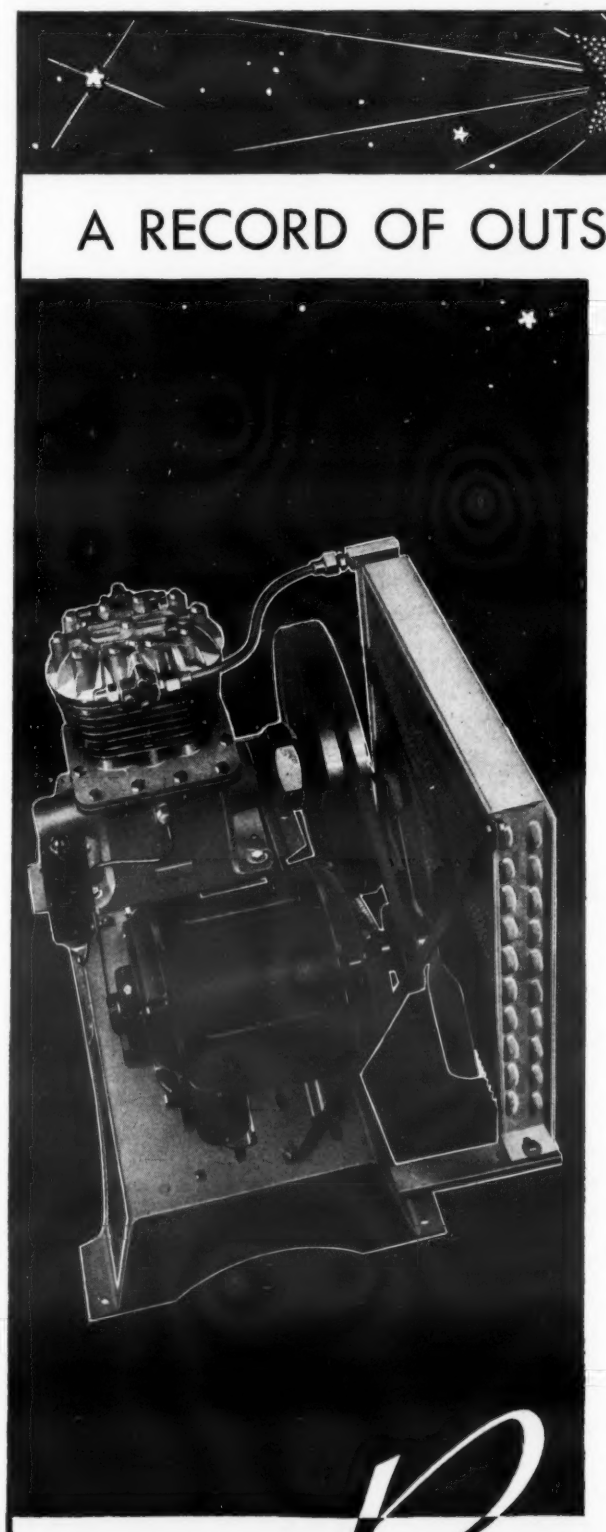
Air Circulating System

Location of air intake.....Return air and discharge air go through same grille
Fresh air intake provision.....Yes
Make of discharge grille.....Uni-Flo

Humidifying and Cleaning

Type of humidifier.....Pan type
Type of filter.....Dry
Make of filter.....Arco

A RECORD OF OUTSTANDING



Brilliance

the fastest growing name in the industry . . .

THE reputation made by a product in service soon overshadows any claims made by the manufacturer of that product. BRUNNER makes many assertions about the ruggedness, the dependability . . . yes, and also the superiority of BRUNNER Compressors. And we have been making such assertions for some time back. The unusual fact is that the product, in this instance, backs up what the producer says. Actually, expressions of satisfaction from buyers of BRUNNER equipment exceed our own advertising in their enthusiasm. In sum, BRUNNER has become the fastest growing name in the industry because we build a better compressor. Six models. Seventeen high-sides. Air or water cooled. Gas engine or electric. 1/6 H. P. to 3 H. P. Complete details in our catalog. We'd appreciate mailing a copy to you. Brunner Manufacturing Company, Utica, N.Y., U.S.A.

Brunner

A NAME BUILT BY 28 YEARS OF SERVICE

SPECIFICATIONS

Floor-Type Conditioners (Continued)

Buffalo Forge

Buffalo Forge Co., Buffalo, N. Y.

Floor-type cabinet air conditioners for remote installation of machine.

	PC					
Model No.	254	354	454	252	352	452
Dimensions (Overall)						
Height (in.)	90	90	90	90	90	90
Width (in.)	47	68	86	47	68	86
Depth (in.)	18	18	18	18	18	18
Blower						
Diameter of wheel (in.)	18	18	18	18	18	18
Blower speed (r.p.m.)	1150	1150	1150	1150	1150	1150
Size of blower motor (hp.)	1	1½	2	1	1½	2
Total circulation (c.f.m.)	2850	4280	5700	3240	4860	6480
Maximum fresh air intake (%)	100	100	100	100	100	100
Surfaces						
Area of cooling surfaces (sq. ft.)	257	394	512	128	197	256
Refrigeration Capacity (B.t.u./hr.)						
Dehumidification	21100	42200	63300	13750	27500	41250
Sensible cooling	63400	126800	190200	41250	82500	123700
Total capacity	84500	169000	253500	55000	110000	165000
Weight, total shipping (lbs.)	925	1200	1450	800	1050	1250

* * *

Functions Performed
Cooling, dehumidifying and circulating. Heating, dehumidifying, and cleaning where desired.

Refrigerant
Refrigerant used ..... Methyl chloride, Freon or water

Cabinet
Make of cabinet ..... Own

Blower
Make of blower ..... Own
Type of blower ..... Centrifugal
Type of blower motor.....As required

Air Circulating System
Location of air intake ..... Bottom
Location of air discharge ..... Top
Fresh air intake provision ..... Yes
Type of discharge grille.....Elbow discharge outlets

Surfaces
Make of cooling coil ..... Aerofin
Cooling coil tubing ..... Copper
Cooling coil fins ..... Copper
Make of heating coil .....Aerofin
Heating coil tubing ..... Copper
Heating coil fins .....Copper

Humidifying and Cleaning
Type of humidifier.....Pan and coil
Is filter provided.....Yes, if desired

Ilg

Ilg Electric Ventilating Co.
2850 N. Crawford Ave., Chicago, Ill.

Floor-type cooling cabinets for remote installation of compressor. Heating and humidification provided on special order.

Model No.	750	1500
Dimensions (Overall)		
Height (in.)	34	38
Width (in.)	39	50
Depth (in.)	14	15
Blower		
Blower speed (r.p.m.)	550	850
Total circulation (c.f.m.)	600	1200
Refrigeration Capacity (B.t.u./hr)		
On 36° F. refrigerant, 80° entering air	12000	18000
Weight		
Net weight (lbs.)	400	825

Functions Performed
Cooling, dehumidifying, and circulating. Heating and humidifying optional.

Cabinet
Make of cabinet .....Ilg
Finish of cabinet.....Grained steel

Blower
Make of blower .....Ilg
Type of blower.....Double centrifugal
Make of blower motor.....Ilg

Air Circulating System
Location of air intake.....Front
Location of air discharge.....Top

Westinghouse

Westinghouse Electric & Mfg. Co.
East Pittsburgh, Pa.

Floor-type cabinet, for remote installation of machine, providing year-'round air conditioning.

Model No.	EH-12	EL-12
Dimensions (Overall)		
Height (in.)	39¾	26⅝
Width (in.)	38	38¾
Depth (in.)	13½	13½
Blower		
Diameter of wheel (in.)	10¼	10¼
Blower speed (r.p.m.)	800	800
Size blower motor (hp.) (2)	1/120	1/120
Total circulation (c.f.m.)	400	400
Maximum fresh air intake (%)	25	25
Surfaces		
Area heating surfaces (sq. ft.)	105	105
Refrigeration Capacity (B.t.u./hr.)		
Dehumidification	4200	4200
Sensible cooling	8480	8480
Total capacity	12680	12680
Heating Capacity (B.t.u./hr.)	25000	25000
Humidification Capacity		
Lbs. of water per hour (70° entering air at 25% relative humidity)	3.5	3.5
Weight		
Net weight (lbs.)	255	220
Total shipping weight (lbs.)	390	345
Price	$187	$242

Functions Performed
Heating, cooling, circulating, humidifying, dehumidifying, and cleaning.

Cabinet
Make of cabinet .....Westinghouse
Finish of cabinet...Walnut, mahogany, or micarta

Blower
Make of blower .....Westinghouse
Type of blower .....Screw
Make of blower motor.....Westinghouse
Type of blower motor.....Capacitor

Air Circulating System
Location of air intake.....Ends
Location of air discharge.....Top
Fresh air intake provision.....Back
Make and type of discharge grille .....Westinghouse vane

Surfaces
Cooling coil tubing .....Copper
Cooling coil fins .....Copper
Heating coil tubing .....Copper
Heating coil fins .....Copper

Humidifying and Cleaning
Type of humidifier .....Spray
Is filter provided .....Yes

Controls
Thermostatic expansion valve for refrigerant, humidistat, and thermostat optional.

Servel

Servel Sales, Inc., Evansville, Ind.

Floor-type cabinet for installation under windows, etc., with a remote application of the refrigerating machine.

Model No.	ACFD-101
Dimensions (Overall)	
Height (in.)	31
Width (in.)	42
Depth (in.)	12
Blower	
Diameter of wheel (in.)	6
Blower speed (r.p.m.)	900
Size of blower motor (hp.)	1/30
Total circulation (c.f.m.)	550
Maximum fresh air intake (%)	50
Surfaces	
Area of cooling surfaces (sq. ft.)	87
Area of heating surfaces (sq. ft.)	45
Refrigeration Capacity (B.t.u./hr.)	
Total capacity	12000
Heating Capacity (B.t.u./hr.)	26000
Humidification Capacity	
Gals. of water per hour	1

Functions Performed
Heating, cooling, circulating, humidifying, dehumidifying, and cleaning.

Refrigerant
Refrigerant used.....Methyl chloride
Type of refrigerant control..Thermostatic expansion valve

Cabinet
Make of cabinet.....Servel
Finish of cabinet.....Walnut

Blower
Type of blower.....Multi-blade
Make of blower motor.....Wagner
Type of blower motor.....Reactance

Air Circulating System
Location of air intake.....Top
Location of air discharge.....Top
Fresh air intake provision.....Yes
Make of discharge grille.....Uni-Flo

Surfaces
Make of cooling coil.....Servel
Cooling coil tubing.....Copper
Cooling coil fins.....Aluminum
Make of heating coil.....Servel
Heating coil tubing.....Copper
Heating coil fins .....Copper

Humidifying and Cleaning
Type of humidifier .....Spray
Make of filter.....American Air Filter or "Dustop"

Controls
Humidistat, thermostat, liquid line solenoid valve, and water-regulating valve.

Zephyr

Savage Arms Corp.
100 E. 42nd St., New York City

Cabinet air-washer type air conditioners for year-'round operation.

Model No.	60	85
Dimensions (Overall)		
Height (in.)	32	38
Width (in.)	50	32¾
Depth (in.)	17	15¾
Blower		
Blower speed (r.p.m.)	700	600
Size of blower motor (hp.)	1/50	1/20
Total circulation (c.f.m.)	250	500
Refrigeration Capacity (B.t.u./hr.)		
Total capacity	9000	15000
Heating Capacity (B.t.u./hr.)	10000	25000
Humidification Capacity		
Lbs. of water per hour	6	12

Functions Performed
Cooling, dehumidifying, heating, humidifying, cleaning, and circulating.

Refrigerant
Refrigerant used .....Freon
Type of refrigerant control..Thermostatic expansion valve

Cabinet
Make of cabinet.....Own
Finish of cabinet.....Walnut

Blower
Type of blower.....Aluminum wheel, forward curved blades

Air Circulating System
Location of air intake.....Model 60—ends; other—top or end
Location of air discharge.....Top
Fresh air intake provision.....If desired

Surfaces
Make of cooling coil.....Own
Cooling coil tubing.....Copper
Cooling coil fins.....Copper
Make of heating coil.....Own
Heating coil tubing.....Copper
Heating coil fins.....Copper

Humidifying and Cleaning
Type of humidifier.....Washer
Type of filter.....Washer

Controls
Water-regulating valve standard. Humidistat, thermostat, and liquid line solenoid valve optional.

Lewis

Lewis Air Conditioners, Inc.
Minneapolis, Minn.

Year-'round air-conditioning cabinet, using a spray of cold well water or refrigerated water for summer cooling.

Model No.	H-1
Dimensions (Overall)	
Height (in.)	31¼
Width (in.)	33¼
Depth (in.)	12
Blower	
Blower speed (r.p.m.)	1140
Size of blower motor (hp.)	1/30
Total circulation (c.f.m.)	400
Refrigeration Capacity (B.t.u./hr.)	
Total capacity, with 40° F. water flowing through spray at the rate of 2 gals. per minute	12400
Heating Capacity (B.t.u./hr.)	
With 1-lb. steam pressure	39200
Humidification Capacity	
Gals. of water per hour	3
Weight, total shipping (lbs.)	250

Functions Performed
Heating, cooling, circulating, humidifying, dehumidifying, and cleaning.

Refrigerant
Refrigerant used .....Cold water

Cabinet
Finish of cabinet.....Grained wood

Blower
Type of blower.....Double centrifugal

Air Circulating System
Location of air intake.....Both sides
Location of air discharge.....Top

Surfaces
Make of cooling coil....None used (spray)

Humidifying and Cleaning
Type of humidifier.....Spray
Type of filter.....Dry
Make of filter....Owens-Illinois "Dustop"

Controls
Heat limit switch, Lewis "Humitrol," solenoid valve.

Crosley Entertains Ten Leading Salesmen

CINCINNATI—Ten leading Crosley salesmen from eastern and central states, who were leaders in refrigerator and radio sales for the two-months period of September and October, were guests of Crosley Radio Corp. here last week.

Each salesman was presented with a diamond-set pin, emblematic of his qualifying for the Crosley 100 per cent club.

Following the presentation of the pins the leading salesmen were addressed by Powel Crosley; Howard Richardson, assistant to the president, in charge of sales; and Glenn Corbett, advertising manager.

Grunow Employees Hold Hallowe'en Party

CHICAGO—A pre-hallowe'en party was scheduled to be held by the General Household Utilities Co. at the Lake Shore Athletic club here Oct. 29. The affair has been labeled a "get to know one another better party."

A splash party in the men's swimming pool in the lower level of the club was to be followed by dancing in the grand ballroom from 9:30 to midnight.

J. J. Davin and Duane Wanamaker, committee chairmen, were assisted by J. Healy, G. Preston, A. Passow, and the Misses V. Petersen, H. Colebeck, and L. Coleman.

Electrolux Will Sponsor Clean-Up Campaign

EVANSVILLE, Ind.—To give impetus to its year-end selling activities, Servel, Inc. will on Nov. 1 open a "Clean Up" campaign among all outlets handling Electrolux refrigerators. The drive will close Dec. 31.

Tools ready for the campaign include a new rotogravure broadside, a personalized sales letter, two new window displays, an envelope stuffer, and a plan for telephone canvassing.

Banker Cites Future Of Air Conditioning

SAN FRANCISCO—Sales in the air-conditioning industry will exceed $10,000,000 this year, according to a prediction made by F. T. Letchfield, consulting engineer and assistant vice president of the Wells Fargo Bank and Union Trust Co.

Discussing the possible trend of this new industry which he said is still largely in the engineering stage, Mr. Letchfield stated:

"The trend will be toward central systems, rather than the self-contained unit, particularly in the home. And it is likewise probable that they will, of necessity, combine the functions of heating or, more properly speaking, will provide conditioned air the year round, as it has already been ascertained that this is more important in winter than in summer."

With regard to the possibilities of air conditioning, Letchfield said:

"It will materially lower the depreciation and upkeep of an ordinary home, where wide fluctuations of temperature and humidity have a deleterious effect upon surfaces.

"Elimination of dust will mean less repainting, longer life to curtains and rugs, and much easier housekeeping.

"The acoustical engineer will find increased uses and markets for sound-proof construction and materials."

General Motors Earns 48 Cents Per Share

NEW YORK CITY—Net earnings of General Motors Corp. applicable to the common stock for the third quarter ended Sept. 30, 1934, were equivalent to 48 cents per share on the common shares. This compares with earnings of 72 cents per share for the third quarter of 1933.

For the nine months ended Sept. 30, 1934, net earnings applicable to the common stock amounted to $1.09 per share, compared with earnings of $1.73 per share for the nine months ended Sept. 30, 1933.

Net earnings available for dividends for the third quarter ended Sept. 30, 1934, amounted to $22,858,728, compared with net earnings of $33,341,618 for the third quarter of 1933.

For the first nine months of 1934, net earnings available for dividends amounted to $92,445,341, compared with net earnings of $81,409,794 for the first nine months of 1933.

Net sales of General Motors Corp., excluding inter-divisional transactions, for the third quarter amounted to $209,986,666, compared with $178,967,035 for the third quarter of last year. Net sales for the nine months ended Sept. 30, 1934, amounted to $718,517,819, compared with $490,921,509 for the corresponding period of 1933.

Straus to Administrate Codes in Division VI

WASHINGTON, D. C.—Robert K. Straus, formerly special assistant to the administrator, has been appointed deputy administrator of the National Recovery Administration, attached to Division VI, the National Industrial Recovery Board announced Oct. 19. Mr. Straus will have charge of the restaurant, ice and refrigerated warehouse codes.

Tough

FITTINGS for Air-Conditioning and Refrigeration in general must be tough to stand the pressures required. Every joint must be tight and stay that way.

Commonwealth Brass Fittings for the refrigeration industry are made from Hot Forged Brass or Extruded Brass Rod, processed so that there is no possibility of seepage or leakage.

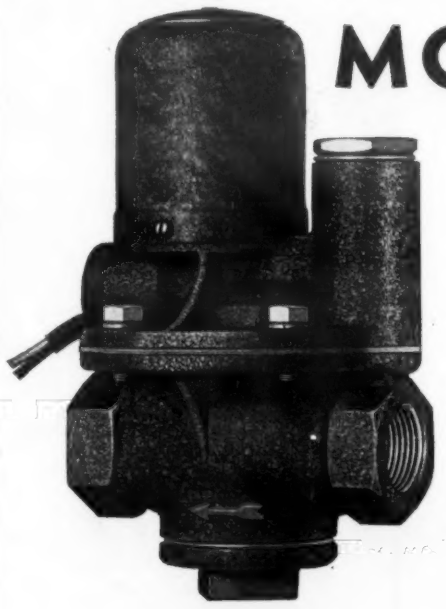
All Commonwealth fittings are made to extremely close limits, inspected 100% and protected in shipping.

For fittings BUILT RIGHT TO STAY TIGHT be sure to depend on Commonwealth.

COMMONWEALTH BRASS CORPORATION

Commonwealth at Grand Trunk R. R., DETROIT, MICHIGAN

MODEL 66

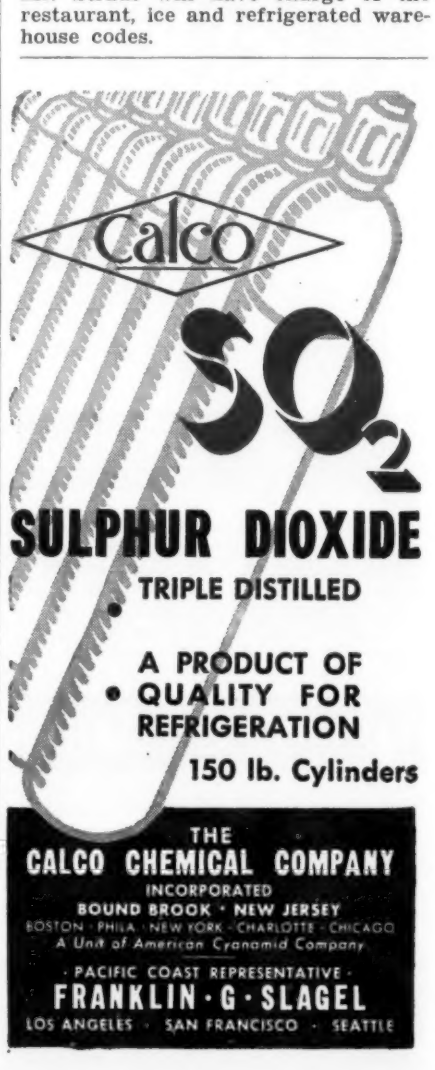


A new water valve for air conditioning and commercial refrigeration. Gives quick dependable control for large amount of water. Based upon the by-pass principle. Solenoid used only to open small by-pass. Made in 1/2 in. and 3/4 in. sizes—all voltage ratings.

Write for Bulletin 406 showing cross section view and operation.

AUTOMATIC PRODUCTS CO.

121 NORTH BROADWAY MILWAUKEE, WIS.



SULPHUR DIOXIDE

TRIPLE DISTILLED

• A PRODUCT OF • QUALITY FOR REFRIGERATION

150 lb. Cylinders

THE CALCO CHEMICAL COMPANY

INCORPORATED

BOUND BROOK • NEW JERSEY

BOSTON · PHILA · NEW YORK · CHARLOTTE · CHICAGO

A Unit of American Cyanamid Company

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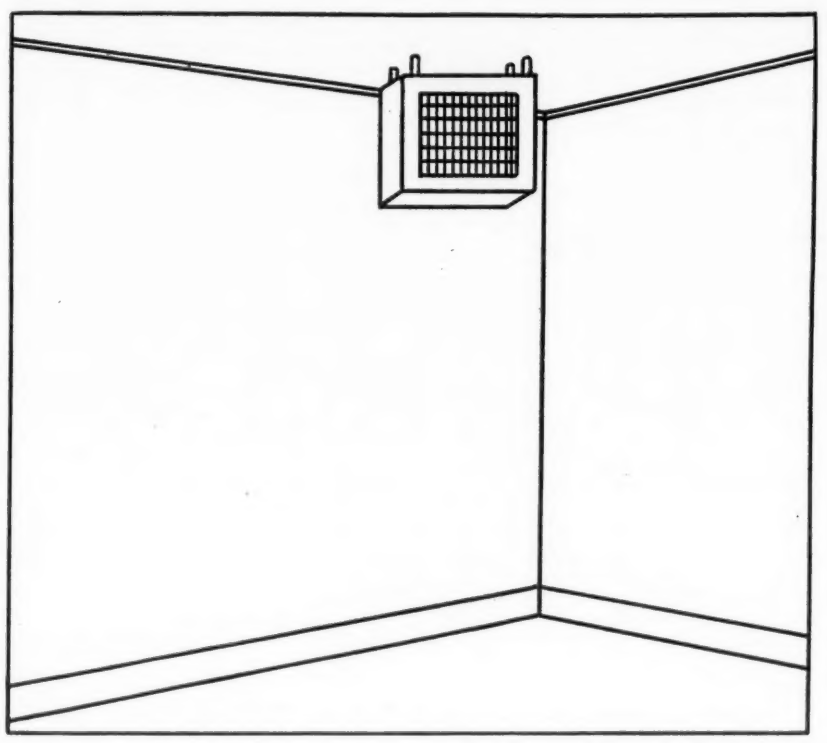
Suspended-Type Conditioners



Suspended air-conditioning units, for remote installation of compressor. These range as high as 10 or 20 tons of refrigeration capacity, and are applicable to the cooling of large rooms. They are mounted either on a wall or from the ceiling.

Ilg-Kold

Ilg Electric Ventilating Co., 2850 N. Crawford Ave., Chicago, Ill.

Ceiling-type room coolers with four-blade propeller type fan forcing air through a direct expansion finned surface.

Model No.	13CU	17CU	19CU	25CU	31CU
Dimensions (Overall)					
Height (in.)	20⅛	25	26⅛	33	40
Width (in.)	20⅛	25	26⅛	33	40
Depth (in.)	19⅛	21⅛	23½	24⅛	28⅝
Blower					
Blower speed (r.p.m.)	1140	1140	1140	855	855
Total circulation (c.f.m.)	810	1625	2620	3130	4800
Refrigeration Capacity (B.t.u./hr.)					
Total capacity	14650	26650	39750	53800	74900

* * *

Functions Performed
Cooling, dehumidifying, and circulating.

Refrigerant
Refrigerant used..Any low-pressure gas
Type of refrigerant control..Thermostatic expansion valve

Cabinet
Make of cabinet ..... Ilg
Finish of cabinet ....."Ilg" green

Blower
Make of blower ..... Ilg
Type of blower.....Four-blade propeller
Make of blower motor ..... Ilg

Air Circulating System
Location of air intake ..... Rear
Location of air discharge ..... Front
Fresh air intake provision ..... No
Type of discharge grille....Stainless steel deflectors

Surfaces
Make of cooling coil ..... Ilg
Cooling coil tubing ..... Copper
Cooling coil fins ..... Copper

Thermal Units

Thermal Units Mfg. Co., 31 E. Loomis St., Chicago, Ill.

Overhead suspension type for unit applications of both heating and cooling.

Model No.	36	64	100	144	210
Dimensions (Overall)					
Height (in.)	15	19	22¾	27	33
Width (in.)	26½	30	34½	42½	44¼
Depth (in.)	28	31	31	31½	32
Blower					
Blower speed (r.p.m.)	1750	1150	1150	1150	1150
Size of blower motor (hp.)	1/10	⅛	⅛	¼	½
Total circulation (c.f.m.)	975	1740	2710	4320	5700
Refrigeration Capacity (B.t.u./hr.)					
Total capacity	10800	19200	30000	47800	63000
Weight, net (lbs.)	255	335	410	510	640
Total shipping weight (lbs.)	325	425	520	650	810

* * *

Functions Performed
Cooling, dehumidifying, heating and circulating.

Compressor
Make of compressor ..... Optional
Make of compressor motor .... Optional

Refrigerant
Refrigerant used .....Freon or methyl chloride
Type of refrigerant control..Thermostatic expansion valve

Cabinet
Make of cabinet ..... Own
Finish of cabinet ..... Steel

Blower
Type of blower.....Propeller

Air Circulating System
Location of air intake.....Rear
Location of air discharge ..... Front
Type of discharge grille.....Louvered deflector

Surfaces
Make of cooling coil ..... Own
Cooling coil tubing.....Silicon-aluminum alloy
Make of heating coil ..... Own
Heating coil tubing.....Silicon-aluminum alloy

Controls
Air switch and thermostat.

An Opportunity for Distributors of Commercial Refrigeration and Air Conditioning

It will pay you to investigate the sales possibilities of the new American Cooling Tower. It is *completely automatic, saves power, increases machine capacity, requires little attention,* and can be made *to fit large or small installations.*

The American Cooling Tower uses no nozzle sprays. That means no stop ups.

Write today for details on Distributor's Franchise for your territory

American Cooling Tower Co.
1922 Grand Ave. Kansas City, Mo.

Westinghouse

Westinghouse Electric & Mfg. Co. East Pittsburgh, Pa.

Overhead suspended type room coolers.

Model No.	ES-05	ES-10
Dimensions (Overall)		
Height (in.)	16¼	21⅜
Width (in.)	18½	23¾
Depth (in.)	13¼	14
Blower		
Diameter of wheel (in.)	10¼	12
Blower speed (r.p.m.)	725	930
Size of blower motor (hp.)	1/120	1/150
Total circulation (c.f.m.)	240	480
Refrigeration Capacity (B.t.u./hr.)		
Dehumidification	2020	4150
Sensible cooling	4060	8375
Total capacity	6080	12525
Weight		
Net weight (lbs.)	90	130
Total shipping weight (lbs.)	165	220
Price	$145	$175

Functions Performed
Cooling, dehumidifying, and circulating.

Refrigerant
Type of refrigerant control..Thermostatic expansion valve

Cabinet
Make of cabinet.....Westinghouse
Finish of cabinet.....Gray, mahogany, or walnut

Blower
Make of blower .....Westinghouse
Type of blower.....Screw
Make of blower motor.....Westinghouse
Type of blower motor.....Capacitor

Air Circulating System
Location of air intake.....Top and sides
Location of air discharge.....Front
Fresh air intake provision..Yes, at bottom
Type of discharge grille.....Deflector

Surfaces
Cooling coil tubing.....Copper
Cooling coil fins.....Copper

Controls
Wall thermostat optional.

Buffalo Forge

Buffalo Forge Co., Buffalo, N. Y.

Overhead suspended type air conditioners for comfort cooling in summer.

Model No.	254	354	454	FSC 252	FSC 352	FSC 452	SC 413	SC 417	SC 419	SC 213	SC 217	SC 219
Dimensions (Overall)												
Height (in.)	18	18	18	18	18	18	18	23¼	27	18	23¼	27
Width (in.)	47	68	86	47	68	86	22½	25½	28½	22½	25½	28½
Depth (in.)	46	46	46	40	40	40	17	19	19¾	17	19	19¾
Blower												
Diameter of wheel (in.)	18	18	18	18	18	18	12	16	18	12	16	18
Blower speed (r.p.m.)	1150	1150	1150	1150	1150	1150	1750	1150	1150	1750	1150	1150
Size of blower motor (hp.)	1	1½	2	1	1½	2	1/20	1/20	⅛	1/20	1/20	⅛
Total circulation (c.f.m.)	2850	4280	5700	3240	4860	6480	700	880	1630	820	1040	1915
Maximum fresh air intake (%)	100	100	100	100	100	100	100	100	100	100	100	100
Surfaces												
Area of cooling surfaces (sq. ft.)	257	394	512	128	197	256	78	95	156	56	69	113
Refrigeration Capacity (B.t.u./hr.)												
Dehumidification	21100	42200	63300	13750	27500	41250	4650	6300	11250	3000	4000	7300
Sensible cooling	63400	126800	190200	41250	82500	123700	13950	18900	33750	9000	12000	22000
Total capacity	84500	169000	253500	55000	110000	165000	18600	25200	45000	12000	16000	29300
Weight												
Total shipping weight (lbs.)	950	1250	1550	825	1100	1350	175	240	330	125	180	240

* * *

Functions Performed
Cooling, dehumidifying, and circulating. Heating, humidifying, and cleaning optional on FSC models.

Refrigerant
Refrigerant used.....Methyl chloride, Freon, or water

Cabinet
Make of cabinet .....Own
Finish of cabinet.....SC models Cadmium plated

Blower
Make of blower .....Own
Type of blower.....FSC models—centrifugal; SC models—propeller type
Type of blower motor.....As required

Air Circulating System
Location of air intake.....Back
Location of air discharge.....Front
Fresh air intake provision....FSC models—yes; SC models—no
Type of discharge grille....FSC models—fan outlets; SC models—louver type

Surfaces
Make of cooling coil.....Aerofin
Cooling coil tubing .....Copper
Cooling coil fins .....Copper
Make of heating coil.....Aerofin
Heating coil tubing .....Copper
Heating coil fins .....Copper

Humidifying and Cleaning
Type of humidifier.....Pan & coil
Type of filter .....Dry

Kelvinator

Kelvinator Corp., Detroit, Mich.

Suspended type air conditioners. All models provide cooling, dehumidifying, circulating, and cleaning. Heating and humidifying optional in "CA" models.

Continuous tubing used in cooling and heating coils, thus eliminating soldered connections and minimizing the possibility of leaks. Down-draft coils, accelerating drainage of condensed moisture, minimizing re-evaporation, and providing accurate humidity control and high cooling efficiency.

Heat exchangers to give high capacity of condensing units and prevent condensation of moisture on suction lines. Completely automatic control of temperature and humidity. Removable cabinet panels, affording accessibility for removal of air filter, drain pans, etc.

Model No.	C50 DH	C75 DH	C 150 DH	C 300 DH	CA 300 DH	CA 450 DH	CA 550 DH	CA 700 DH	CA 240 DC	CA 300 DC	CA 375 DC	CA 450 DC
Dimensions (Overall)												
Width (in.)	15½	18¾	19	22¼	26¼	26¼	30¼	30¼	26¼	26¼	30¼	30¼
Depth (in.)	29¾	30	45½	45½	45½	45½	49½	49½	45½	45½	49½	49½
Blower												
Blower speed (r.p.m.)	860	1145	1145	1725	1725	1725	1725	1725	1725	1725	1725	1725
Size of blower motor (hp.)	1/20	1/10	1/10	¼	⅓	½	½	½	⅓	½	½	½
Total circulation (c.f.m.)	190	400	535	1020	1020	1700	1530	2555	1020	1700	1530	2555
Refrigeration Capacity (B.t.u./hr.)												
Dehumidification	2500	6900	10100	21000	21000	27000	32500	40000	21000	27000	32500	40000
Sensible cooling	3800	9600	13400	27000	27000	39000	40000	57000	27000	39000	40000	57000
Total capacity	6300	16500	23500	48000	48000	66000	72500	97000	48000	66000	72500	97000
Heating Capacity												
B.t.u./hr. with 2-lb. steam supply, 70° F. entering air dry bulb, and 40% relative humidity	...	...	...	...	96700	140000	140000	140000	96700	96700	140000	140000
Humidification Capacity												
Lbs. of water per hour	...	...	...	...	100	149½	149½	149½	100	100	149½	149½
Weight, net (lbs.)	150	175	265	475	600	700	800	900	600	700	800	900
Total shipping weight (lbs.)	190	215	305	520	660	760	875	975	660	760	875	975

* * *

Functions Performed
Cooling, dehumidifying, circulating and cleaning.

Heating and humidifying optional on all but models C50DH, C75DH, C150DH, and C300DH.

Cabinet
Finish of cabinet ..... Prime

Blower
Type of blower ..... Centrifugal
Type of blower motor..Models C50DH, C75DH and C150DH—3-speed capacitor; others—1-speed repulsion-induction

Air Circulating System
Location of air intake ..... Top
Location of air discharge ..... Front
Type of discharge grille.....Multi-vane

Surfaces
Make of cooling coil ..... Kelvinator
Cooling coil tubing ..... Copper
Cooling coil fins ..... Copper
Make of heating coil..... Kelvinator
Heating coil tubing ..... Copper
Heating coil fins ..... Copper

Humidifying and Cleaning
Type of humidifier ..... Spray
Type of filter ..... Dry

Controls
Thermostatic expansion valve standard on all. Air by-pass dampers on all but first three of models. Humidistat and thermostat furnished as accessory equipment.

THE TRADE'S LARGEST FORGED BRASS LINE SHUT-OFF VALVE

AX-13247 Overall Height Open 10-1/4 in.

AX-13247 is designed primarily as a line shut-off valve for commercial refrigeration and air conditioning installations. It is furnished with 1-½ in. female I.P.S. threads or with 1-⅝ in. O.D. Tube connection incorporating our patented end. The body is of forged brass. The stem is made of Tuf-Stuf, an extra strong corrosion resisting alloy which will not seal itself to the seat. The valve is double packed.

All Mueller Brass Co. valves and fittings are furnished full flow, equal to inside diameter of tubing used, assuring unrestricted passage of the refrigerant.

Send for our Catalog R-2 illustrating and describing a complete range of valves and fittings, etc. for electric refrigeration work.

MUELLER BRASS CO.
Port Huron, Michigan

SPECIFICATIONS

Suspended-Type Conditioners (Continued)

King Zeero

King Zeero Co., 3118 Clybourn Ave., Chicago, Ill.

Suspended unit room coolers using a spiral fin coil. For humidification a water spray, with solenoid water valve and humidity control switch, is offered.

Model No.	75	100	150	200	300	500
Dimensions (Overall)						
Height (in.)	25	25	26	29	34	42
Width (in.)	15	18	18	21	25	32
Depth (in.)	23	23	25	25	25	25
Blower						
Blower speed (r.p.m.)	1725	1140	1140	1140	1140	1140
Size of blower motor (hp.)	1/20	1/10	1/10	1/8	1/6	1/2
Total circulation (c.f.m.)	1500	2300	2300	3200	4400	8200
Refrigeration Capacity (B.t.u./hr.)						
Total capacity	9000	12000	18000	24000	36000	60000
Price	$210	$240	$280	$320	$405	$610

* * *

Functions Performed
Cooling, dehumidifying, cleaning, and circulating.

Refrigerant
Refrigerant used ..... Optional

Blower
Type of blower..Five-blade propeller type

Air Circulating System
Location of air intake..... Back
Location of air discharge..... Front
Type of discharge grille..... Louvered deflector

Surfaces
Make of cooling coil...Own—spiral fin coil
Cooling coil tubing..... Steel tubing
Cooling coil fins..... Strip steel stock

Humidifying and Cleaning
Type of humidifier..... Spray
Type of filter..... Washer
Make of filter..... Own

Controls
Motor control, solenoid water valve and humidity control switch, the latter to be connected to the motor control.

American Blower

American Blower Corp., Detroit, Mich.

Overhead suspended cabinets for year-'round operation.

Series "B," model No.	112	212	312	215	218	221
Dimensions (Overall)						
Height (in.)	36	36	36	49	49	49
Width (in.)	36	64	96	80	100	120
Depth (in.)	87¾	87¾	87¾	87¾	97¾	105¾
Blower						
Total circulation (c.f.m.)	1500	3000	4500	5500	7200	9000
Surfaces						
Area of cooling surfaces (sq. ft.)	226	388	604	732	996	1320
Refrigeration Capacity (B.t.u./hr.)						
Dehumidification	22600	45000	68000	83100	108600	136000
Sensible cooling	34000	68000	102000	124600	163400	204000
Total capacity	56600	113000	170000	207700	272000	340000

* * *

Functions Performed
Cooling, dehumidifying, heating, humidifying, circulating, and cleaning.

Blower
Make of blower..... Sirocco
Type of blower ..... Centrifugal

Humidifying and Cleaning
Type of filter..... Dry
Make of filter..... Arco

Controls
Thermostat; air by-pass dampers.

Servel

Servel Sales, Inc., Evansville, Ind.

An overhead type summer air conditioner for wall or ceiling mounting.

Model No. **AC-101**

Dimensions (Overall)
Height (in.) 22½
Width (in.) 22½
Depth (in.) 23

Blower
Diameter of wheel (in.) 16
Blower speed (r.p.m.) 1140
Size of blower motor (hp.) 1/15
Total circulation (c.f.m.) max..... 1800

Surfaces
Area of cooling surfaces (sq. ft.).... 85

Refrigeration Capacity (B.t.u./hr.)
Total capacity 18000

Functions Performed
Cooling, circulating, and dehumidifying.

Refrigerant
Refrigerant used ..... Methyl chloride
Type of refrigerant control..Thermostatic expansion valve

Cabinet
Make of cabinet ..... Servel
Finish of cabinet ..... Lacquer

Blower
Make of blower..... Servel
Type of blower..... Adjustable pitch fan
Make of blower motor..... Wagner
Type of blower motor..... Split-phase

Air Circulating System
Location of air intake..... Back
Location of air discharge..... Front

Surfaces
Make of cooling coil ..... Servel
Cooling coil tubing ..... Copper
Cooling coil fins ..... Aluminum

Controls
Thermostat, liquid line solenoid valve.

U. S.

U. S. Air Conditioning Corp.
Northwestern Terminal, Minneapolis.

Suspended type air conditioners, for remote installation of refrigerating machine.

Model No. **754**

Dimensions (Overall)
Height (in.) 18
Width (in.) 18
Depth (in.) 10

Blower
Diameter of wheel (in.) 10
Blower speed (r.p.m.) 1200
Size of blower motor (hp.) 1/20
Total circulation (c.f.m.) 500

Surfaces
Area of cooling surfaces (sq. ft.).... 30

Refrigeration Capacity (B.t.u./hr.)
Dehumidification 4000
Sensible cooling 8000
Total capacity 12000

Weight, net (lbs.) 120
Total shipping weight (lbs.)..... 145

Functions Performed
Cooling, dehumidifying, and circulating.

Refrigerant
Type of refrigerant control..Thermostatic expansion valve

Cabinet
Make of cabinet..... Own
Finish of cabinet..... Metal

Blower
Make of blower..... Own
Type of blower..... Propeller

Air Circulating System
Location of air intake..... Back
Location of air discharge..... Front
Make and type of discharge grille...U. S. Air Conditioning two-way deflector

Surfaces
Make of cooling coil..... Own
Cooling coil tubing..... Copper
Cooling coil fins..... Copper

Controls
Thermostat and liquid line solenoid valve.

Artic

REG. U. S. PAT. OFF.

DU PONT METHYL CHLORIDE, ESPECIALLY MANUFACTURED FOR REFRIGERATION USE

Meets All Demands of Modern Household and Commercial Units

- Small volume displacement per unit of refrigeration
- Very stable under operating conditions
- Non-corrosive to ordinary equipment, even if moisture gets into the system.
- Easily handled and serviced

Strict production control and analytical tests on ARTIC before shipping assure you of receiving a product *always* low in moisture and acidity. Adequate stocks in selected distribution centers available at all times.

Write for copies of ARTIC technical book and service manual.

DU PONT

R&H Chemicals

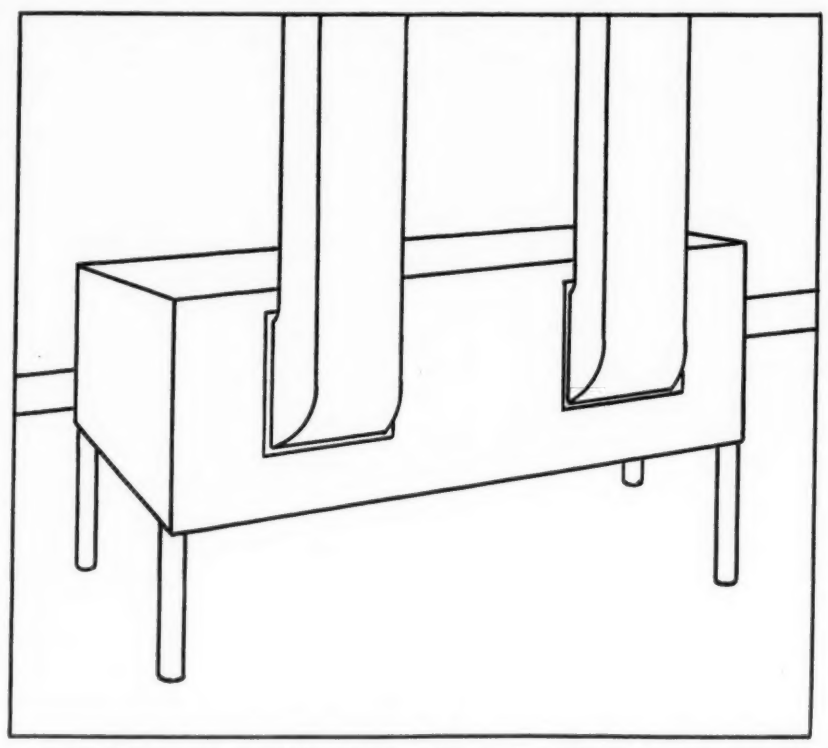
THE R. & H. CHEMICALS DEPT.

E. I. DU PONT DE NEMOURS & CO., INC.

WILMINGTON, DELAWARE

District Sales Offices: Baltimore, Boston, Charlotte, Chicago, Cleveland, Kansas City, Newark, New York, Philadelphia, Pittsburgh, San Francisco

Duct-Type Conditioners



Duct-type air-conditioning equipment. These include heating and cooling coils, filter, controls, and may or may not have the air-circulating fan and humidifying spray. They are used for larger, central air-conditioning systems from which air is distributed to several rooms by an arrangement of ducts.

Kelvinator

Kelvinator Corp., Detroit, Mich.

Air-conditioning coils for use in central systems, ducts, or plenum chambers.

Coils are of continuous tubing, thus eliminating soldered connections, and minimizing the possibility of leaks. Down-draft coils, accelerating drainage of condensed moisture, minimizing re-evaporation, and providing accurate humidity control, and high cooling efficiency.

Heat exchangers to give high capacity of condensing units and prevent condensation of moisture on suction lines. Complete automatic control of temperature and humidity.

Model No.	DSD150	DSD190 DSD210	DSD270 DSD330
Dimensions (Overall)			
Height (in.)	16¼	16¼ 18½	19½ 18½
Width (in.)	28	28 37¼	35¼ 42⅜
Depth (in.)	10⅜	10⅜ 11¾	11¾ 11¾
Blower			
Total circulation (c.f.m.)	600	600 850	850 1050
Refrigeration Capacity (B.t.u./hr.)			
Dehumidification	6000	9500 8500	13500 16000
Sensible cooling	12500	13500 17500	19000 24000
Total capacity	18500	23000 26000	32500 40000
Weight, net (lbs.)	75	95 110	140 170
Total shipping weight (lbs.)	110	140 160	195 235

* * *

Functions Performed
Cooling and dehumidifying.

Surfaces
Make of cooling coil ..... Kelvinator
Cooling coil tubing ..... Copper
Cooling coil fins ..... Copper
Make of heating coil ..... Kelvinator
Heating coil tubing ..... Copper
Heating coil fins ..... Copper

Controls
Thermostatic expansion valve.

Electrol

Electrol, Inc., 934 Main Ave., Clifton, N. J.

Year-'round air-conditioning systems of the central type.

Model No.	35CH	50CH	75CH	90CH
Dimensions (Overall)				
Height (in.)	66	66	66	66
Width (in.)	33⅜	38⅜	38⅜	52⅛
Depth (in.)	44⅛	53⅛	74⅜	72⅛
Compressor				
No. of cylinders	3	3	3	3
Bore (in.)	2.5	2.5	3.25	3.25
Stroke (in.)	3	3	3	3
Compressor speed (r.p.m.)	340	400	340	480
Size of motor (hp.)	2	3	5	5
Normal refrigerant charge (lbs.) (Freon)	12-16	12-16	12-16	12-16
(Methyl chloride)	8-14	8-14	8-14	8-14
Blower				
Blower speed (r.p.m.)	1100	870	910	790
Size of blower motor (hp.)	¼	⅓	¾	1
Total circulation (c.f.m.)	1200	1700	2500	3500
Maximum fresh air intake (%)	10	10	10	10
Refrigeration Capacity (B.t.u./hr.)				
Total capacity	24850	29840	45300	62100
Heating Capacity (B.t.u./hr.)	88000	128000	188000	256000
Weight, total shipping (lbs.)	1200	1600	2100	2700

* * *

Functions Performed
Cooling, dehumidifying, humidifying, cleaning, and circulating.

Compressor
Make of compressor..... Universal Cooler
Is high safety cut-out provided..... Yes
Type of compressor control..... Dual

Refrigerant
Refrigerant used..... Freon or methyl chloride
Type of refrigerant control..Thermostatic expansion valve

Cabinet
Finish of cabinet..... Light beige

Blower
Make of blower..... Electrol-American

Air Circulating System
Location of air intake..... Top
Location of air discharge..... Top
Fresh air intake provision..... Yes

Surfaces
Make of cooling coil..... Aerofin
Cooling coil tubing..... Copper
Cooling coil fins..... Copper
Make of heating coil..... American Blower
Heating coil tubing..... Copper
Heating coil fins..... Copper

Humidifying and Cleaning
Type of humidifier..... Spray
Type of filter..... Dry—cloth bag type

Controls
Thermostat, humidistat, liquid line solenoid valve, air by-pass dampers, and water-regulating valve.

Simplifies Service Problems

RANCO THERMOSTAT

- RANCO has simplified the thermostat problems for the Jobber and Wholesaler by engineering the Model KRS. 5 different combinations will meet the replacement demands of nearly every household refrigerator, ice cream cabinet and water cooler.

THE AUTOMATIC RECLOSING CIRCUIT BREAKER COMPANY
1300-10 Indianola Avenue, Columbus, Ohio

Westinghouse

Westinghouse Electric & Mfg. Co.
East Pittsburgh, Pa.

Duct-type equipment for central air-conditioning systems.

Model No.	ES-22	ES-42	ES-62
Dimensions (Overall)			
Height (in.)	21⅜	21⅜	21⅜
Width (in.)	32½	54½	65¼
Depth (in.)	48	48	48
Blower			
Diameter of wheel (in.)	21	33	45
Blower speed (r.p.m.)	840	840	1000
Size blower motor (hp.)	¼	¾	1
Total circulation (c.f.m.)	900	1800	2700
Maximum fresh air intake (%)	25	25	25
Surfaces			
Area of heating surfaces (sq. ft.)	300	615	930
Refrigeration Capacity (B.t.u./hr.)			
Dehumidification	9480	18960	26325
Sensible cooling	19920	38840	55275
Total capacity	29400	57800	81600
Heating Capacity			
(B.t.u./hr.)	72500	140800	224000
Humidification Capacity			
Lbs. of water per hour.	3½	7	10½
Weight			
Net weight (lbs.)	585	920	1090
Total shipping (lbs.)	775	1155	1450
Price	$560	$800	$960

Functions Performed
Heating, cooling, humidifying, dehumidifying, circulating, and cleaning.

Cabinet
Make of cabinet ..... Westinghouse
Finish of cabinet..... Brown Presdwood

Blower
Type of blower..... Centrifugal
Make of blower motor..... Westinghouse
Type of blower motor..... Capacitor

Air Circulating System
Location of air intake..... Back
Location of air discharge..... Front
Fresh air intake provision...Yes, at back
Type of discharge grille..... Deflectors

Surfaces
Cooling coil tubing..... Copper
Cooling coil fins..... Copper
Heating coil tubing..... Copper
Heating coil fins..... Copper

Humidifying and Cleaning
Type of humidifier..... Spray
Is filter provided..... Yes
Make of filter..... Owens-Illinois Glass

Controls
Refrigerant controlled by thermostatic expansion valve; humidistat and thermostat optional.

Mellish & Murray

Mellish & Murray Co.
1715 Carroll Ave., Chicago, Ill.

Year-'round central air-conditioning systems, all built to special order.

Functions Performed
Cooling, dehumidifying, heating, humidifying, cleaning, and circulating.

Compressor
Make of compressor..... Frick, Reliance. York, Wittenmeier, Elliot Steam Ejector

Refrigerant
Refrigerant used..... Freon, Carbon dioxide, water

Blower
Make of blower..... American Blower, Clarage, Buffalo, Sturtevant

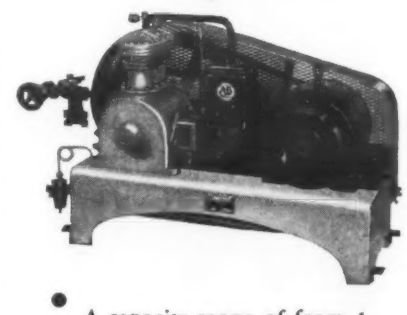
Air Circulating System
Fresh air intake provision..... Yes

Surfaces
Make of cooling coil..... Trane
Make of heating coil..... Trane

Humidifying and Cleaning
Type of humidifier ..... Spray
Make of filter....American or Independent

Controls
Humidistat, thermostat, liquid line solenoid valve, water-regulating valve.

FREON UNITS FOR AIR CONDITIONING



- A capacity range of from 1 to 30 tons daily cooling effect—an efficiency that brings new installations—and lack of troublesome service make Reliance Condensing Units ideal for air conditioning and commercial use. Also units for ammonia, and methyl chloride.
- Reliance Finned Coils are all steel—real metal-to-metal contact. No BTU loss because of electrolysis. It will pay you to investigate "Reliance."

RELIANCE REFRIGERATING MACH. CO., 3409 NORTH KEDZIE AVE., CHICAGO

Export Div: The A. J. Alsdorf Corp. 223-7 W. JACKSON BLVD., CHICAGO, ILL., U.S.A. Cable: ALSDORF-CHICAGO.

RELIANCE

SPECIFICATIONS

Duct-Type Conditioners (Continued)

Buffalo Forge

Buffalo Forge Co., Buffalo, N. Y.

Heavy capacity units (up to 20 tons of refrigeration) for central air-conditioning installations.

Model No.	PC-121	PC-122	PC-123	PC-151	PC-152	PC-153	PC-181	PC-182
Dimensions (Overall)								
Height (in.)	21	21	21	29½	29½	29½	41½	41½
Width (in.)	27	40	60	33	54	81	39	69
Depth (in.)	78½	80½	80½	91	105	105	114	126
Blower								
Diameter of wheel (in.)	18	18	18	24	24	24	36	36
Blower speed (r.p.m.)	1100	1100	1100	800	800	800	580	580
Size of blower motor (hp.)	¼	½	¾	½	1	1½	1	2
Total circulation (c.f.m.)	800	1600	2400	1600	3200	4800	3200	6400
Maximum fresh air intake (%)	100	100	100	100	100	100	100	100
Surfaces								
Area of cooling surfaces (sq. ft.)	170	342	555	336	600	960	600	1200
Area of heating surfaces (sq. ft.)	45	93	147	113	194	302	186	366
Refrigeration Capacity (B.t.u./hr.)								
Dehumidification	11000	22000	33000	22000	44000	66000	44000	88000
Sensible cooling	20000	40000	60000	40000	80000	120000	80000	160000
Total capacity	31000	62000	93000	62000	124000	186000	124000	248000
Heating Capacity (B.t.u./hr.)	60000	120000	180000	120000	240000	360000	240000	480000
Humidification								
Lbs. of water per hour	10	20	30	20	40	60	40	80
Weight								
Net weight (lbs.)	415	665	940	905	1110	1575	1170	1815
Total shipping weight, lbs.)	475	750	1050	1000	1250	1750	1300	2000

* * *

Functions Performed

Cooling, dehumidifying, heating, humidifying, circulating, and cleaning.

Refrigerant

Refrigerant used.....Methyl chloride, Freon or water

Cabinet

Make of cabinet ..... Own

Blower

Make of blower ..... Own
Type of blower.....Centrifugal
Type of blower motor.....As required

Air Circulating System

Location of air intake.....Back
Location of air discharge....Front or top
Fresh air intake provision ..... Yes
Type of discharge grille.....Fan outlets

Surfaces

Make of cooling coil ..... Trane
Cooling coil tubing ..... Copper
Cooling coil fins ..... Aluminum
Make of heating coil ..... Aerofin
Heating coil tubing ..... Copper
Heating coil fins ..... Copper

Humidifying and Cleaning

Type of humidifier.....Pan and coil
Is filter provided ..... Yes

Clarage

Clarage Fan Co., Kalamazoo, Mich.

Duct type air conditioners in three styles: "Duotherm" models for floor mounting, "Moderator" models for overhead suspension, and "Unitherm" models for special industrial air conditioning or produce cooling. Cleaning is optional in the "Moderator" line, and heating, humidifying, and cleaning are optional in the "Unitherm."

Model No.	Duotherm (4 Sizes)		Moderator (4 Sizes)		Unitherm (5 Sizes)	
Dimensions (Overall)						
Height (in.)	60		66		89½	109¼
Width (in.)	54¼	94¼	54¼	94¼	55	117
Depth (in.)	51¼	63¼	36	42	26	36
Blower						
Diameter of wheel (in.)	Varies		Varies		12	18
Blower speed (r.p.m.)	Varies		Varies		690	1750
Size of blower motor (hp.)	¼	3	½	3	½	3
Total circulation (c.f.m.)	1300	9070	1300	1970	1000	2000
Refrigeration Capacity (B.t.u./hr.)						
Total Capacity	Varies with size of unit					
Weight, net (lbs.)	1500	4000	1300	3600	950	3000

* * *

Functions Performed

Cooling, dehumidifying, heating, humidifying, cleaning and circulating.

Refrigerant

Refrigerant used .....Freon, methyl chloride, or brine
Type of refrigerant control..Thermostatic expansion valve

Cabinet

Make of cabinet ..... Own
Finish of cabinet.....Duotherm model—black crackled lacquer; others—green lacquer

Blower

Make of blower ..... Own
Make of blower motor ..... Optional
Type of blower motor ..... Varies

Air Circulating System

Location of air intake....Duotherm—top; Moderator—front; Unitherm—bottom
Location of air discharge..Duotherm and Moderator—top; Unitherm—rear

Surfaces

Make of cooling coil..Aerofin or Clarage
Cooling coil tubing.....Copper or steel
Cooling coil fins....Copper, aluminum, or steel
Make of heating coil...Aerofin or Trane
Heating coil tubing..... Copper
Heating coil fins.....Copper or aluminum

Humidifying and Cleaning

Type of humidifier.....Spray or grid
Type of filter ..... Dry
Make of filter....Owens-Illinois "Dustop"

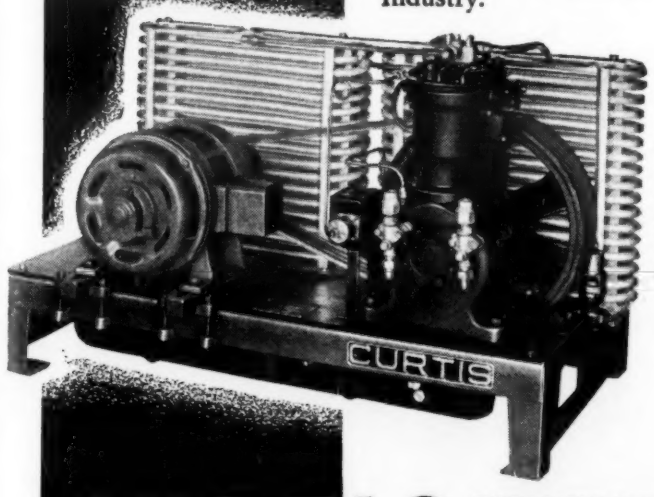
Controls

Thermostat, humidistat, liquid line solenoid valve, water regulating valve, air by-pass dampers.

CURTIS OFFERS

- Fair Policy—
  80 Years' Successful Merchandising
- Quality Workmanship—
  40 Years' Building Compressors
- A Complete Line—
  55 Units 1/6 to 10 H.P.
- Financial Stability—
  Highest Capital and Credit Rating Dun and Bradstreet—AaA1
- Proven Design—
  12 Years' Building Refrigeration Units

Only by building permanently on this complete combination can you expect sure profits in this fast-growing industry.



• Some desirable territories are still open for reliable distributors.

•

Write for details.

CURTIS

CURTIS REFRIGERATION MACHINE CO.
Division of Curtis Manufacturing Company
1912 Kienlen Avenue, Saint Louis, Missouri
518 H Hudson Terminal, New York City

American Blower

American Blower Corp., Detroit, Mich.

Equipment for central air-conditioning installations, designed particularly for homes.

Series "R," model No.	35	50	75	90
Dimensions (Overall)				
Height (in.)	66	66	66	66
Width (in.)	33⅜	38⅜	38⅜	52⅛
Depth (in.)	44⅛	53⅛	74⅜	72⅛

Blower

Blower speed (r.p.m.) ——600 to 1100——
Size of blower motor (hp.) ——¼ to 1——
Total circulation (c.f.m.) ——1200 to 4200——
Maximum fresh air intake (per cent) —— 50 ——
Weight, total shipping (lbs.) ——1050 to 2700——
Price ——$546 to $1197——

Functions Performed

Cooling, dehumidifying, heating, humidifying, cleaning, and circulating.

Refrigerant

Refrigerant used .....Water
Type of refrigerant control..Thermostatic expansion valve

Cabinet

Finish of cabinet.....Beige lacquer with black trim

Blower

Make of blower.....Sirocco
Type of blower.....Centrifugal
Make of blower motor.....G-E or Westinghouse

Air Circulating System

Location of air intake.....Base
Location of air discharge.....Top
Fresh air intake provision.....Yes
Make and type discharge grille....Sirocco diffuser

Surfaces

Make of cooling coil.....Long Mfg. Co. or Aerofin
Cooling coil tubing.....Copper
Cooling coil fins.....Copper
Make of heating coil....Long Mfg. Co. or Aerofin
Heating coil tubing.....Copper
Heating coil fins.....Copper

Humidifying and Cleaning

Type of humidifier.....Spray
Type of filter.....Dry
Make of filter.....Own

Controls

Thermostat, humidistat, liquid line solenoid valve, air by-pass dampers, water-regulating valve.

Zephyr

Savage Arms Corp.
100 E. 42nd St., New York City

Duct-type air-washer air conditioners for year-'round operation.

Model No.	85	86	88
Dimensions (Overall)			
Height (in.)	38	44½	56½
Width (in.)	32¾	35¼	49¾
Depth (in.)	15¾	22¾	31¼
Blower			
Blower speed (r.p.m.)	600	600	600
Size blower motor (hp.)	1/20	1/10	1/4
Total circulation (c.f.m.)	500	1000	2000
Refrigeration Capacity (B.t.u./hr.)			
Total capacity	15000	30000	60000
Heating Capacity (B.t.u./hr.)	25000	50000	100000
Humidification Capacity			
Lbs. water per hour	12	24	48

Functions Performed

Cooling, dehumidifying, heating, humidifying, circulating, and cleaning.

Refrigerant

Refrigerant used .....Freon
Type of refrigerant control..Thermostatic expansion valve

Blower

Type of blower.....Aluminum wheel, forward curved blades

Air Circulating System

Location of air intake.....Top
Location of air discharge.....Top
Fresh air intake provision.....If desired

Surfaces

Make of cooling coil.....Own
Cooling coil tubing.....Copper
Cooling coil fins .....Copper
Make of heating coil.....Own
Heating coil tubing.....Copper
Heating coil fins.....Copper

Humidifying and Cleaning

Type of humidifier.....Washer
Type of filter.....Washer

Controls

Water-regulating valve standard. Humidistat, thermostat, and liquid line solenoid valve optional.

Fedders Coils

Fedders Mfg. Co.
57 N. Tonawanda, Buffalo, N. Y.

Heating and cooling coils for duct-type central air-conditioning installations. Complete specifications not available at present, but are being prepared and will be ready in three or four weeks. Cooling coils built up to 6,000 sq. ft. of surface. Both heating and cooling coils of all-copper construction.

Air Conditioning Boosts Hosiery Sales at Macy's

NEW YORK CITY—Air conditioning helps sales volume in the summer by keeping sample and display merchandise fresh and shoppers and sales people cool, according to Miss Ann Siegal, women's hosiery clerk on the first floor of R. H. Macy & Co., department store equipped with Carrier air conditioning.

Speaking of air conditioning and its effect on merchandise, Miss Siegal said:

"On hot days, hosiery gets damp and sticky from fingering and perspiration. Women like to run their hands into the hose to examine the weave and note the color when next to the skin. Here where we have conditioned air, there is no perspiration on the hands, and the hose is cool and clean. Consequently the hose slips easily over the women's hands and seems to impress them by its sheerness and silkiness."

Servel

Servel Sales, Inc., Evansville, Ind.

Unit for central systems, providing all functions of year-'round air conditioning.

Model No. ACO-301

Dimensions (Overall)

Height (in.) 18
Width (in.) 50½
Depth (in.) 37

Blower

Diameter of wheel (in.)..... 10½
Blower speed (r.p.m.).....1140
Size of blower motor (hp.)..... ½
Total circulation (c.f.m.) max.....2900
Maximum fresh air intake (%)..... 50

Surfaces

Area of cooling surfaces (sq. ft.)....240
Area of heating surfaces (sq. ft.)....110

Refrigeration Capacity (B.t.u./hr.)

Total capacity 50000

Heating Capacity (B.t.u./hr.).....125000

Humidification Capacity

Gals. of water per hour..... 2

Functions Performed

Heating, cooling, circulating, humidifying, dehumidifying, and cleaning.

Refrigerant

Refrigerant used .....Methyl chloride
Type of refrigerant control..Thermostatic expansion valve

Cabinet

Make of cabinet .....Servel
Finish of cabinet .....Plain

Blower

Type of blower .....Multi-blade
Make of blower motor.....Wagner
Type of blower motor.....Capacitor

Air Circulating System

Location of air intake.....Back
Location of air discharge.....Front
Fresh air intake provision.....Yes
Make and type of discharge grille..Servel vane

Surfaces

Make of cooling coil.....Servel
Cooling coil tubing .....Copper
Cooling coil fins .....Aluminum
Make of heating coil.....Servel
Heating coil tubing .....Copper
Heating coil fins .....Copper

Humidifying and Cleaning

Type of humidifier.....Spray
Make of filter.....American Air Filter or "Dustop"

Controls

Humidistat, thermostat, liquid line solenoid valve, air by-pass dampers, and water-regulating valve.

Lewis

Lewis Air Conditioners, Inc., Minneapolis, Minn.

Central type air conditioner for homes. Built as a fan-filter section, and heat exchanger section.

Model No.	M-3A	M-3B	M-3C
Dimensions (Overall)			
Height (in.)	46½	58½	58½
Width (in.)	33	50⅜	50⅜
Depth (in.)	33¾	33¾	43¾
Blower			
Blower speed (r.p.m.)	724	625	544
Size of blower motor (hp.)	⅙	⅓	½
Total circulation (c.f.m.)	1000	1750	2500
Surfaces			
Area of heating surfaces equivalent of direct radiation (steam) (sq. ft.)	430	860	1290
Refrigeration Capacity (B.t.u./hr.)			
Total capacity, with 40° F. water flowing through spray head	41300	82500	112000
Heating Capacity (B.t.u./hr.)			
With 1-lb. steam pressure	103000	206000	310000
Weight			
Total shipping (lbs.)	500	900	1200

Functions Performed

Heating, cooling, circulating, humidifying, dehumidifying, and cleaning.

Refrigerant

Refrigerant used.....Cold well water or refrigerated water

Cabinet

Make of cabinet.....Lewis
Finish of cabinet.....Dark green

Blower

Type of blower.....Centrifugal

Air Circulating System

Location of air intake.....Top
Location of air discharge.....Top

Humidifying and Cleaning

Type of humidifier.....Spray
Type of filter .....Dry
Make of filter.....Owens-Illinois "Dustop"

Controls

Humidity controlled by Lewis "Humitrol" actuating a water solenoid valve. Duplex thermostat controls heating and cooling by motorized valves.

Carraway

Carraway Engineering Co., Inc.
613 N. Pearl St., Dallas, Tex.

Year-'round central system for homes and small business establishments. Indoor temperature and humidity in summer is varied in accordance with outside conditions. Complete automatic control. Equipment designed to operate at maximum efficiency under normal weather conditions and inefficiently under abnormal or extreme winter or summer conditions, which is claimed to result in economical costs. Data on one model only (No. 1) are given below.

Model No. 1

Dimensions (Overall)

Height (in.) 68
Width (in.) 144
Depth (in.) 36

Blower

Total circulation (c.f.m.) 1500
Velocity through discharge grille (f.p.m.) .....350 to 500

Surfaces

Area of cooling surfaces (sq. ft.).... 5.5
Area of heating surfaces (sq. ft.).... 5.5

Refrigeration Capacity (B.t.u./hr.)

Total capacity 36000

Heating Capacity (B.t.u./hr.) 100000
Weight, total shipping (lbs.).....2313

Functions Performed

Heating, cooling, circulating, humidifying, dehumidifying, and cleaning.

Refrigerant

Refrigerant used .....Freon
Type of refrigerant control..Thermostatic expansion valve

Air Circulating System

Location of air intake.....Side or rear
Location of air discharge.....Top
Fresh air intake provision.....Yes
Make of discharge grille.....Uni-Flo

Surfaces

Type of cooling coil.....Extended fin surface, with return bends of continuous coil
Cooling coil tubing.....Copper
Cooling coil fins.....Copper
Type of heating coil.....Straight tube rolled into headers at each end
Heating coil tubing.....Copper
Heating coil fins.....Copper

Humidifying and Cleaning

Type of humidifier.....Spray controlled by hygrostat, which flashes moisture into air stream
Type of filter.....Dry

Controls

Humidistat, thermostat, liquid line solenoid valve, water-regulating valve, and others.

V-METH-L

Boils at −10.6° F

VIRGINIA METHYL CHLORIDE

A Pure, Efficient Refrigerant

for

AIR CONDITIONING SYSTEMS

. . . made by the makers of ESOTOO

V-Meth-L—Methyl Chloride refined and sold by Virginia Smelting Company, is a refrigerant of exceptional purity. Both moisture and acidity are reduced to the minimum. Ready for direct charging from our "orange cylinders" to the air-conditioning system. Shipped in containers holding 1200, 90, 6 and 3½ lbs. Prompt deliveries are assured by stocks in all principal centers.

VIRGINIA SMELTING CO.
WEST NORFOLK, VIRGINIA

MAIL THIS COUPON NOW

F. A. Eustis, Sec'y, Virginia Smelting Co., 131 State St., Boston, Mass.
Send me the literature I have checked. I am interested in receiving any additional literature on Electrical Refrigeration you may issue from time to time.

☐ Folder: Extra Dry ESOTOO (Liquid Sulphur Dioxide) ERN-10-31-34
☐ Folder: V-METH-L (Virginia Methyl Chloride)
☐ Folder: Transferring from large to small cylinders
☐ Circular: Physical properties of various refrigerants

Name .....
Street & No. .....
City & State .....

PATENTS

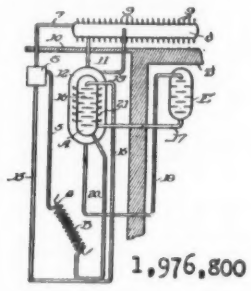
Issued Oct. 16, 1934

1,976,777. SOLID CARBON DIOXIDE MACHINE. Justus C. Goosmann, Mount Vernon, N. Y., assignor, by mesne assignments, to Adico Development Corp. Application July 18, 1931. Serial No. 549,498. 7 Claims. (Cl. 62—121.)

1. A device of the type described comprising a chamber closed at one end and provided with a movable piston, a removable closure plate for the other end of the chamber, means for moving the closure plate into and out of closing relation, an outer casing surrounding the inner casing and connected thereto to form a closed double wall structure, the closed double walls being isolated from the inner chamber, means for delivering liquid carbon dioxide into the space between the double walls, means for maintaining a desired pressure in the inner chamber, and means for withdrawing the carbon dioxide from between the double walls.

1,976,800. ABSORPTION REFRIGERATING SYSTEM. Kurt V. Nesselmann, Berlin-Siemensstadt, Germany, assignor, by mesne assignments, to The Hoover Co., North Canton, Ohio, a corporation of Ohio. Application April 11, 1931. Serial No. 529,376. In Germany April 12, 1930. 9 Claims. (Cl. 62—119.)

1. In a continuously operable absorption refrigerating system the combination of a condenser, an absorber, an evapora-



1,976,800

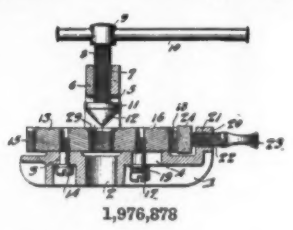
tor, means for maintaining the condenser at a higher pressure than the evaporator, means operable in response to said higher pressure for conveying liquid refrigerant from the condenser to the evaporator and for causing the same to pass in heat exchange relation with the absorber as it passes from the condenser to the evaporator whereby a portion of the refrigerant is evaporated by heat from the absorber and means for returning the evaporated portion to the condenser.

1,976,872. COOLER FOR LIQUIDS. Alvin H. Baer, Carbondale, Pa., assignor to The Carbondale Machine Co., Carbondale, Pa., a corporation of Pennsylvania. Application July 21, 1933. Serial No. 681,588. 12 Claims. (Cl. 62—126.)

12. In a heat exchange device, a coil comprising spirally wound pipes all having substantially the same gradient arranged in concentric helics of successively increasing diameter, one or more of said helics consisting of a plurality of such spirally wound pipes turned into each other so as to lie in a common cylindrical plane.

1,976,878. TUBE FLARING TOOL. Harold W. Eden, Chicago, Ill., assignor to E. Edelmann & Co., Chicago, Ill., a corporation of Illinois. Application July 27, 1932. Serial No. 625,184. 8 Claims. (Cl. 153—79.)

1. A flaring tool comprising a supporting member, a flaring screw carried at a fixed position upon said supporting mem-



1,976,878

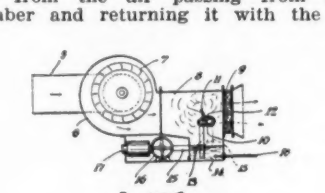
ber, a clamp block revolubly carried on said supporting member, a second clamp block revolubly and slidably carried by said supporting member, said clamp blocks being provided with cooperating tube clamping grooves to form tube receiving and clamping openings centered with respect to the flaring screw, and means to secure said clamping blocks together in tube clamping relation.

1,976,879. REFRIGERANT STORAGE MEANS. Roland G. Ewer, Carbondale, Pa., assignor to The Carbondale Machine Co., Carbondale, Pa., a corporation of Pennsylvania. Application March 28, 1934. Serial No. 717,815. 7 Claims. (Cl. 62—101.)

1. A device for supplying cooling fluid to a heat transfer mechanism at substantially constant initial temperature, comprising a multiple compartment tank, a device for cooling the fluid in said tank, pipes for connecting individual compartments of said tank to a heat transfer device or to said cooling means, pumping means connected to said pipes, and valves in said pipes whereby fluid may be circulated through said heat transfer means and back to an empty compartment of the tank or alternatively may be circulated from successive compartments of the tank through the cooling means and back to an empty compartment for storing refrigeration in the tank.

1,976,911. TEMPERATURE INDICATOR. Samuel M. Anderson, Sharon, Mass., assignor to B. F. Sturtevant Co., Boston, Mass., a company. Application June 21, 1930. Serial No. 462,780. 1 Claim. (Cl. 73—24.)

Apparatus for indicating the wet bulb temperature of air, comprising a spray chamber, means for passing a current of air, comprising a spray chamber, means for passing a current of air to be analyzed through said chamber, means for projecting an atomized spray of water in said chamber, a basin for collecting the water returned from said spray, means for collecting the entrained moisture from the air passing from said chamber and returning it with the re-



1,976,911

turned spray water into said basin, and means for indicating the temperature of the water from said spray and removed from the air.

1,976,963. AIR COOLING AND DEHUMIDIFYING SYSTEM. Lawrence M. Persons, Des Moines, Iowa, assignor to Penn Electric Switch Co., Des Moines, Iowa, a corporation of Iowa. Application Jan. 13, 1933. Serial No. 651,522. 10 Claims. (Cl. 62—109.)

1. In an air cooling and dehumidifying system, a reservoir, a freezable liquid therein, an air pipe extending through said liquid, means for circulating air through said pipe and automatic temperature actuated means for controlling the flow of said air to cause it to be either received from and discharged to outside atmosphere only or received from and discharged into a room only.

1,977,056. REFRIGERATING SHOW CASE. Michael J. Goalstone, Denver, Colo., assignor to The National Store Fixture Co., Denver, Colo., a corporation. Application Feb. 16, 1931. Serial No. 515,975. 8 Claims. (Cl. 62—89.5.)

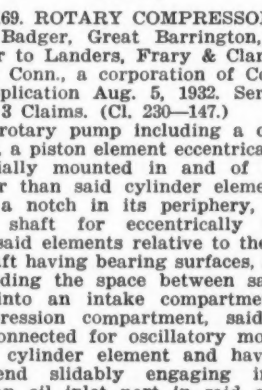
1. A refrigerating show case containing front and rear display racks providing a space therebetween, means for the vertical adjustment of one rack to thereby change the size of the space between the racks, refrigerating means disposed for the circulation of cooled air through said space.

1,977,169. ROTARY COMPRESSOR. Harry M. Badger, Great Barrington, Mass., assignor to Landers, Frary & Clark, New Britain, Conn., a corporation of Connecticut. Application Aug. 5, 1932. Serial No. 627,585. 3 Claims. (Cl. 230—147.)

1. A rotary pump including a cylinder element, a piston element eccentrically and tangentially mounted in and of smaller diameter than said cylinder element and having a notch in its periphery, an eccentric shaft for eccentrically moving one of said elements relative to the other, said shaft having bearing surfaces, a blade for dividing the space between said elements into an intake compartment and a compression compartment, said blade being connected for oscillatory movement to said cylinder element and having its inner end slidably engaging in said notch, an oil inlet port in said cylinder element for admitting a lubricant to said notch behind said blade, said port being blanked by said piston element during a portion of the cycle of movement of the piston and being uncovered during the remaining portion, and an outlet duct leading from said notch to the periphery of said eccentric shaft, said outlet duct being open while the inlet port is closed and said outlet duct being closed by said shaft when the inlet port is open.

1,977,248. AIR CONDITIONING SYSTEM. James A. Space, East Orange, N. J., assignor to Doherty Research Co., New York, N. Y., a corporation of Delaware. Original application April 14, 1931, Serial No. 529,911. Divided and this application April 4, 1933. Serial No. 664,324. 6 Claims. (Cl. 257—8.)

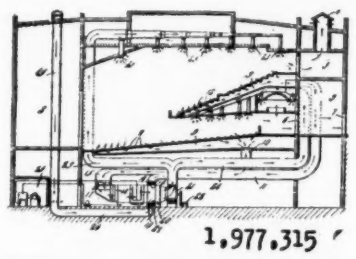
1. A hollow window-sill for use in connection with the ventilation system of a building, which comprises a reinforced



1,977,248

sill member, means for supporting the sill member upon and in spaced relation with respect to an underlying portion of the building wall, an outwardly sloping base member carried by the building wall and spaced below the sill member so as to define with the latter and with side members at least one hollow chamber open at the front and rear, a filter-supporting foraminous member removably mounted within the said chamber, a replaceable filter cartridge carried by the said foraminous member, and means connecting the interior of the filter-supporting member with a fresh air conduit having therein means for inducing a flow of fresh air from without the building through the filter cartridge and to the upper portion of a room to be ventilated.

1,977,315. METHOD OF VENTILATING AND PROVIDING DESIRED ATMOSPHERIC CONDITIONS IN INCLOSURES. Leo L. Lewis, Plainfield, N. J., assignor to Auditorium Conditioning Corp., New York, N. Y. Original application April 28, 1927, Serial No. 187,376.



1,977,315

Divided and this application Aug. 20, 1930. Serial No. 476,572. 4 Claims. (Cl. 98—33.)

1. The method of ventilating and providing desired atmospheric conditions in an inclosure in which people may congregate in considerable numbers, which includes withdrawing air from and returning the same to the inclosure, conditioning a variable portion of the withdrawn air to lower its absolute humidity content, mixing the conditioned air with a mixture of withdrawn air and outside air to form a volume of air larger than the volume of conditioned air and at a dry bulb temperature higher than that of the conditioned air.

1,977,320. SNOW MAKING MACHINE. William D. McKinney, Sacramento, Calif., assignor to William H. Mattox, Sacramento, Calif. Application Sept. 10, 1932. Serial No. 632,503. 2 Claims. (Cl. 83—62.)

1. A snow making machine comprising a vertical rotary face plate having a diametrically disposed slot therethrough, knives mounted on and back of the plate and projecting through the slot lengthwise thereof and in opposed relation on opposite sides of the axis of the plate, said knives being set with their leading sides at an obtuse angle to the plate, and with clearance between said sides and adjacent sides of the slot, means to feed a block of ice against the knives to cause shavings to be removed therefrom and diverted through the slot, a housing about and extending back from the plate, a tangential outlet chute depending from the housing, and concavely curved deflectors whose axis of curvature is parallel to the slot rigid with and projecting to adjacent the back of the housing from adjacent and substantially tangent to the knives at their inner ends, said deflectors extending the full length of the knives.

1,977,373. FREEZING AND PACKAGING FOOD PRODUCTS. Clarence Birdseye, Gloucester, Mass., assignor to Frosted Foods Co., Inc., Dover, Del., a corporation of Delaware. Application April 6, 1932. Serial No. 603,571. 7 Claims. (Cl. 62—170.)

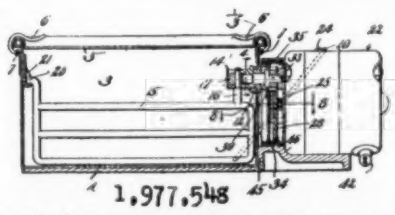
1. The method of freezing and packaging food products, characterized by the steps of supporting a carton upon a plane surface and reinforcing its marginal walls by enclosing the carton within an open frame, packing the carton while so supported and reinforced, engaging the packed carton upon its exposed faces, and freezing the product therein from said faces.

1,977,472. REFRIGERATOR CAR. William F. Dietrichson, Berwick, Pa., assignor to American Car and Foundry Co., New York, N. Y., a corporation of New Jersey. Application Feb. 24, 1934. Serial No. 712,718. 6 Claims. (Cl. 62—19.)

3. In a refrigerator car, refrigerant holding containers therein spaced transversely thereof to provide a downflow air conduit therebetween, the contiguous walls of said containers being exposed, insulation covering the remainder of the container walls, a bulkhead adjacent the containers and forming the front wall of said conduit, an air feeder duct arranged in the lading zone of the car and discharging into the upper portion of the air passage, and air spreader means below the containers so formed and arranged as to effect substantially uniform distribution of air from the conduit into the lading zone of the car.

1,977,548. ACCESSORY UNIT FOR REFRIGERATING APPARATUS. Alfred B. Frenning, Fall River, and Joseph Lewis Hallett, Braintree, Mass., assignors to The S. M. Howes Co., Boston, Mass., a corporation of Massachusetts. Application May 23, 1931. Serial No. 539,546. 9 Claims. (Cl. 259—101.)

1. A portable unit of the character described comprising an upstanding container provided with a supporting base to rest upon and have extended surface contact with a shelf or the like of a domestic refrigerating apparatus and having an integral upright wall formed with an aperture; a dasher pivotally and removably mounted within said container so as to vibrate on a horizontal axis; an endwise removable horizontally disposed spindle extending through said aperture one end of which is within said receptacle and separably connected with said dasher so as to lock the latter in position within said container at all times while said dasher is in motion; joint closing means for preventing leakage through said aperture; a dasher operating motor removably mounted on said base, and power-transmitting and motion-



1,977,548

translating means permanently mounted on the frame of said motor and permanently connecting the armature shaft of said motor with said spindle.

General Electric Sales For First 9 Months Increase 25%

NEW YORK CITY—Sales billed by all divisions of General Electric Co. during the first nine months of 1934 amounted to $121,735,122.98, compared with $97,426,146.39 during the corresponding period last year, an increase of 25 per cent, President Gerard Swope announced last week.

Profit available for common stock for the first nine months of this year was $11,714,247.20, compared with $6,886,600.45 for the first nine months of last year. This is equivalent to 41 cents a share for the first nine months of 1934—compared with 24 cents a share for the first nine months of 1933—on 28,845,927 shares outstanding in both periods. Dividends declared for nine months this year amount to 45 cents a share, compared with 30 cents a share for the corresponding period last year.

A comparative statement of sales and earnings for the first nine months follows:

	1934	1933
Net sales billed	$121,735,122.98	$97,426,146.39
Less: Costs, expenses, and other charges	113,306,954.06	93,492,739.18
Net income from sales	8,428,168.92	3,933,407.21
Other income, less interest paid and sundry charges	5,217,382.13	4,884,484.04
Profit available for dividends	13,645,551.05	8,817,891.25
Less: Cash dividends on special stock	1,931,303.85	1,931,290.80
Profit available for dividends on common stock	$ 11,714,247.20	$ 6,886,600.45

Orders received during the first nine months of 1934 amounted to $132,613,543, compared with $104,785,001 for the nine months last year, an increase of 27 per cent.

Charging Line Made By Imperial Brass

CHICAGO—Imperial Brass Co. has just introduced a new charging line for use by service men handling refrigerants. It has a ¼-in. S.A.E. swivel connection at each end, and is 25¾ in. long. To prevent refrigerant gases from attacking the composition material which forms the outside of the charging line, it is manufactured with a brass liner.

The company has also added return bends, L's, and T's with female pipe threads to its line of Imperial solder type forged fittings, manufactured under a Mueller license.

According to C. H. Benson, advertising manager of the company, aluminum fittings and tubing originally designed for other applications, is finding increasing use in refrigeration, particularly where weight is an important factor such as in air-conditioning systems for the new high-speed streamline trains.

Another development reported by Mr. Benson is Imperial's new practice of offering a *set* of service tools—including a flaring tool, tube cutter, and an extra cutting wheel—all together in a special metal case for service men.

Century Reports Increase In Burner Sales

CEDAR RAPIDS, Iowa—Showing a spurt in sales, Century Engineering Corp., manufacturer of oil burners, boiler-burner units, and humidifiers here, reports an increase in shipments during September of 83½ per cent over the corresponding month of 1933, according to Mr. McWilliams, vice president in charge of sales.

BUYER'S GUIDE

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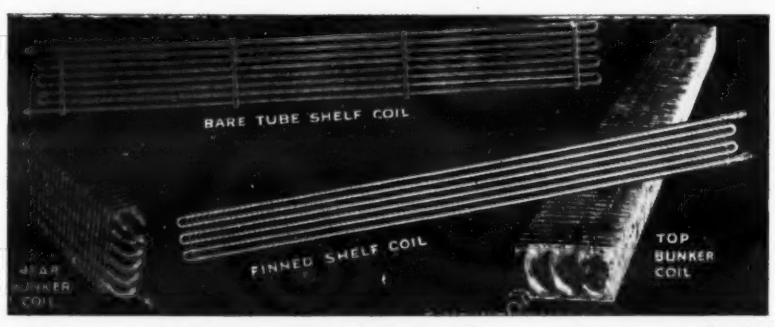
SPECIAL ADVERTISING RATE (this column only)—$12.00 per space.
Payment is required monthly in advance to obtain this special low rate.
Minimum Contract for this column—13 insertions in consecutive issues.



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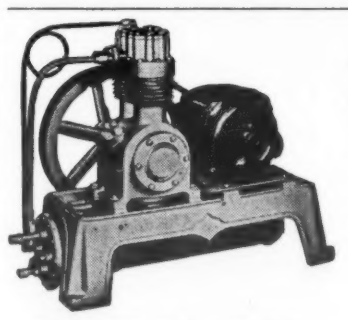
TRENTON AUTO RADIATOR WORKS, Trenton, N. J. Branch Offices NEW YORK & PITTSBURGH



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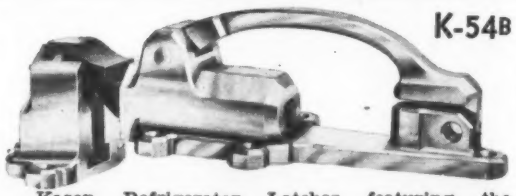
OUTSTANDING PERFORMANCE
attested by satisfied users — EVERYWHERE!

Sturdy Condensing Units from 80 to 2868 Lbs. I.M.E., and all other commercial refrigeration equipment—Wall type cases with machinery—A beautiful household line of modern, conservative styles—Write for full data.

THE STARR COMPANY
Cable "Starr" Richmond, Indiana (factory) U. S. A. Since 1927
1344 S. Flower St., Los Angeles, Calif.

Style EW—Water Cooled With Water Cooled Head

KASON
Refrigerator
HARDWARE



K-54B

K-40A

Kason Refrigerator Latches featuring the famous patented Micrometer strike for hairline offset adjustments and the rugged Forged Brass construction rank foremost in the field of refrigerator hardware. There is a Kason Lock for every refrigerator need.

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TEMPRITE
Instantaneous Cooling
"The leading cooler for water, beer and other beverages"
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For Freon and Methyl Chloride. Accurate release of pressure at any pre-determined relief point. Exclusive patented reseating feature. Soft metal seat—will not rust, corrode or stick. Nor will it melt under temperatures caused by gas friction. Sizes up to 2".

HENRY VALVE CO.
Specialized Valves & Fittings for Refrigeration
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WRITE FOR BULLETINS DESCRIBING HENRY REFRIGERATION SPECIALTIES

QUESTIONS

Household Appliance Sales

No. 1918 (Distributor, Pennsylvania)—"We are planning our program for 1934 which includes the probable expansion into other appliances, and we would like to have the following information which we believe would be available from your files and would be of considerable assistance to us in our deliberations.

"Total number of units and total dollar volume for the entire year of 1933, and for the year of 1934 to date, on the following appliances: electric refrigerators, electric ranges, washing machines, dishwashers, vacuum cleaners, radios, health lamps, and small appliances. Also, a forecast of 1934 on the same items as prepared by the General Electric Bridgeport Research Division.

"We believe all of the information is available from your files without entailing a lot of work, and if you can send it to us it will certainly be appreciated. The writer has been receiving your magazine for many years and noticed the various statistics from time to time but this is the first time specific information would be of considerable help to us if you can furnish it."

Answer: Quantity and dollar value sales of household electric refrigerators and other household appliances for 1933 and previous years are given in the Statistical Section of the 1934 REFRIGERATION DIRECTORY. For yearly estimates of household electric refrigerator sales made by ELECTRIC REFRIGERATION NEWS see page 472, and for other appliance and radio figures reprinted from *Electrical Merchandising* and *Radio Retailing* see pages 489 through 497.

World sales of household electric refrigerators through August of 1934 as estimated by ELECTRIC REFRIGERATION NEWS totaled 1,225,000 units with an approximate retail value of $215,000,000.

According to the American Washing Machine Manufacturers Association, shipments of washing machines totaled 877,251 units for the first eight months of 1934, with the total for the year anticipated at about 1,250,000. Eight-months sales of home ironers totaled 77,700 units. No value figures were given.

Shipments of floor-type vacuum cleaners through July totaled 398,633 units while hand-type cleaners totaled 122,707. Oil burner shipments through August numbered 49,060. These figures were reported in the *Survey of Current Business* of the U. S. Department of Commerce, and no value figures were given.

Sales of radio receivers for the first six months of 1934 as reported in *Radio Retailing* numbered 1,774,700 with an estimated retail dollar value of $70,000,000.

Billed sales of electric ranges reported to the National Electrical Manufacturers Association and published in *Electrical Merchandising* totaled 64,055 units for the first six months.

Compressor Parts

No. 1919 (Dealer, California)—"Kindly advise us where we can obtain compressor parts for electric refrigerators."

Answer: Manufacturers of parts for refrigerator compressors are listed in the 1934 REFRIGERATION DIRECTORY beginning on page 181.

'Eskimo Pie' Machinery

No. 1920 (Distributor, South America)—"I would greatly appreciate it if you will be so kind as to put me in connection with some ice cream factory who have machinery of the type for preparing the 'Esquimo-Pie' ice creams as I am interested not only in said equipment but in its accessory as well."

Answer: Machinery for making ice cream bars of the "Eskimo Pie" type is manufactured by the following companies: Eskimo Pie Corp., 541 W. 25th St., New York City; Anderson Bros. Mfg. Co., Rockford, Ill.; Kay Machinery Co., 1050 Bolivar Road, Cleveland, Ohio.

Creamery Package Co. and Cherry-Burrell Co. of Chicago, manufacturers of commercial refrigerating machinery, might be able to supply you with the desired equipment. These companies have offices in various parts of the world and may have branches located in your country.

If you require only one machine for making ice cream bars, Mr. Shepman of the Redford Ice Cream Co., Redford, Mich., has one for sale.

Household Sales

No. 1921 (Advertising Agency, Ohio)—"Can you give us Nema and industry household refrigerator sales for August and September as you did for the balance of the year in the Sept. 12 issue."

Answer: Estimated sales to distributors and dealers by industry manufacturers during August totaled 90,200 units. Nema companies sold 79,705 units during the month. These figures were published on page 18 of the Oct. 3 issue of ELECTRIC REFRIGERATION NEWS.

Nema figures for September have not as yet been received, but they, together with the industry estimate for September, will probably be ready for publication in the Nov. 7 issue of the NEWS.

Service Companies

No. 1922 (Wisconsin)—"I would appreciate it very much if you could furnish me with the address of some service organization in Milwaukee or Chicago who are capable of, and make a specialty of servicing hermetically sealed units."

Answer: Some of the companies listed below will probably be able to service hermetically sealed units:

Refrigeration Service Corp.
2823 N. 23rd St., Milwaukee, Wis.
W-M Refrigeration Co.
2515 N. Third St., Milwaukee, Wis.
Refrigeration Maintenance Corp.
365 E. Illinois St., Chicago, Ill.
George Monjian Co.
360 E. Grand Ave., Chicago, Ill.
Refrigeration Service Laboratories
418 Rush St., Chicago, Ill.

Milk Coolers

No. 1923 (Manufacturer, Canada)—"We would be pleased to obtain from you the names of manufacturers of direct expansion farm milk coolers for use with methyl chloride or Freon gas.

"We are also in the market for an ammonia gas mask of the canister type which should retail for about $6 or $8."

Answer: For manufacturers of electrically refrigerated milk coolers see page 240 of the 1934 REFRIGERATION DIRECTORY.

Ammonia gas masks for refrigeration service men are made by Mine Safety Appliance Co., Braddock, Thomas & Meade Sts., Pittsburgh, Pa., and Pulmosan Safety Equipment Corp., 176-A Johnson St., Brooklyn, N. Y.

Waukesha Refrigerator

No. 1924 (Manufacturer, Michigan)—"Our distributor in Johannesburg has written us asking for a report on the gasoline powered refrigerators manufactured by Waukesha Motor Co. of Waukesha, Wis.

"As we do not have any information regarding the above company's products, we are wondering if you can help us out by giving us whatever information you may have available regarding the performance of their products and whether the market for this product is good in this country—in other words, any information you may have regarding this firm and its products.

"If agreeable to you, you may write direct to our distributor, or you may send us the information and we will gladly pass it on to our distributor."

Answer: The Waukesha gasoline motor-powered refrigerating unit was announced and described in an article on page 1 of the April 11 issue of ELECTRIC REFRIGERATION NEWS. A full page advertisement covering the Waukesha line was published on page 5 of the April 18 issue, and specifications of the Waukesha household model were given on page 16 of the May 30 issue.

Refrigerator Exports

No. 1925 (Ice Cream Co., Denmark)—"We refer to the note 'Exports of Electric Refrigerators' which is reported every month; we also have these notes for the first month, but unfortunately have lost them for the summer months. We therefore kindly ask you to let us have these notes for 1934, every month, or an issue of the ELECTRIC REFRIGERATION NEWS in which these notes have been mentioned, up to date."

Answer: Exports of household and commercial electric refrigerators and parts to each country are released monthly by the Bureau of Foreign and Domestic Commerce and are published in ELECTRIC REFRIGERATION NEWS as received. Reports for 1934 to date have been published as follows:

January—April 18 issue.
February—May 23 issue.
March—June 6 issue.
April—July 4 issue.
May—July 18 issue.
June—September 5 issue.
July—October 10 issue.
August—October 24 issue.

Refrigerator Manufacturers

No. 1926 (Manufacturer, Illinois)—"Do you have a list of all refrigerator manufacturers in the United States? We are interested in securing a list of organizations manufacturing refrigerators for both household and general commercial use."

Answer: Manufacturers of household electric refrigerators are listed in the 1934 REFRIGERATION DIRECTORY beginning on page 262. Since the publication of the 1934 edition of the DIRECTORY several new companies have brought out household electric refrigerators as follows:

Atwater-Kent Mfg. Co.
4700 Wissahickon Ave., Philadelphia, Pa.
Fairbanks-Morse Home Appliances, Inc.
430 S. Green St., Chicago, Ill.
May Radio & Refrigeration Corp.
551 Fifth Ave., New York, N. Y.
National Refrigeration Corp.
924 E. Monument Ave., Dayton, Ohio.
Truscon Steel Co.
Electric Refrigeration Div.
Cleveland, Ohio.
Waukesha Motor Co., Waukesha, Wis.
(Gasoline motor powered.)

Manufacturers of commercial electric refrigeration systems are listed in the DIRECTORY beginning on page 252.

BOOKS

Second Lesson in G-E Training Course

(This is the second in a series of reviews of books comprising the General Electric Kitchen Appliance Salesmanship course prepared for G-E salesmen by LaSalle Extension University.)

Opening assignment in this course was an analysis of the motives and decisions which lead the average person to make a purchase of any kind. It also gave instruction in the advantage-proof-action selling process, but in a fairly general way.

The second assignment takes the first two of the G-E salesman's functions—the approach and the kitchen presentation—and concentrates on the proper technique in handling these important parts of the appliance sales process.

First comes the reminder that the sale of an appliance is actually the result of a number of sub-sales—acceptance by the prospect of everything from the salesman's appearance to the fountain pen when order-signing time comes.

Then is listed a variety of approaches which may be used, depending upon the circumstances, but it is shown clearly that no matter what the approach is, its "sale" depends upon selling yourself, arousing Mrs. Homemaker's interest, and gaining admittance into her home.

Thorough, detailed, and of commendable clarity is the next section of the assignment, which deals with the salesman's living room presentation of the General Electric kitchen plan. Its instruction is divided into four main parts:

First, how the salesman should, at the start, sit at some distance from the prospect. Second, how the prospect's interest and curiosity should be aroused, and how the General Electric Co., as an institution, should be sold. Third comes opening of the plan book, and pointers on how the salesman should be seated to guide the interview as he turns the book's pages. Fourth, a page-by-page plan for presenting the book most effectively.

Completion of the plan book presentation is supposed to bring an entree into the prospect's kitchen, so part 3 of this book is devoted to a study of proper procedure by the salesman when he has gone into that room.

It shows how to make the housewife to see the contrast between her present kitchen and the kitchens shown in the plan book, how to secure an opening for presentation of one of the three G-E kitchen appliances, and how to go about securing measurements of the prospect's kitchen for further study of her individual problems and possible presentation of a sketch.

When a sketch has been prepared, the salesman calls back, of course, and there are directions in this book for conducting the second interview—how to lead into the sale of a particular appliance as a starter in the all-electric kitchen.

Quite exhaustive in its treatment of the subject, the next chapter points out the importance of selling the "source" to both the husband and wife, and gives ample information as to how to play up the prestige and stability of both the General Electric Co. and the dealer whom the salesman represents. This is one of the most interesting parts of the book.

CLASSIFIED

RATES: Fifty words or less, one insertion $2.00, additional words four cents each. Three insertions $5.00, additional words ten cents each.

PAYMENT in advance is required for advertising in this column.

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FIELD MAN, Sales Engineer, and Branch Manager with 15 years experience with oil burners, household and commercial refrigeration, and air conditioning. Can handle sales training, installation, and service. Has unusual record as field supervisor, district sales manager, and branch manager. Has been with major electric refrigeration manufacturer for 10 years. Box 647.

REFRIGERATION ENGINEER shortly leaving for the Orient seeks an agency to represent any firm or business proposition, or to act on commission in any business or confidential matter. Address: Okada, 67 Quinby Ave., White Plains, N. Y.

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ALLELECTRIC:—Rebuilding and supplies. All standard make compressor units, bodies, floats, motors, etc., rebuilt with genuine replacement parts. Our shop is equipped with modern machinery; we now reface old shafts, seals, etc., equal to new. Quick service—lowest prices—all labor and material guaranteed. Price list mailed to dealers on request. Allelectric Refrigeration Service Co., Inc., 451 East 163rd St., New York City.

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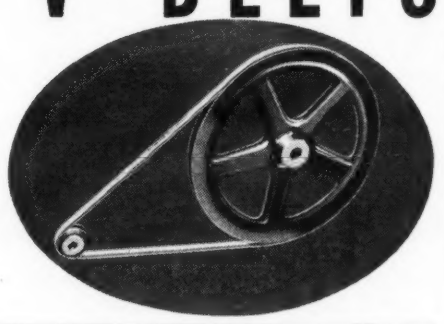

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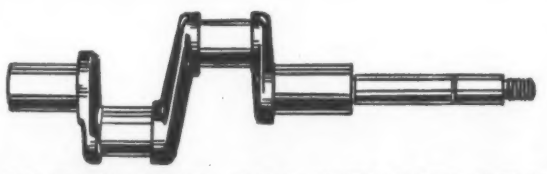

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